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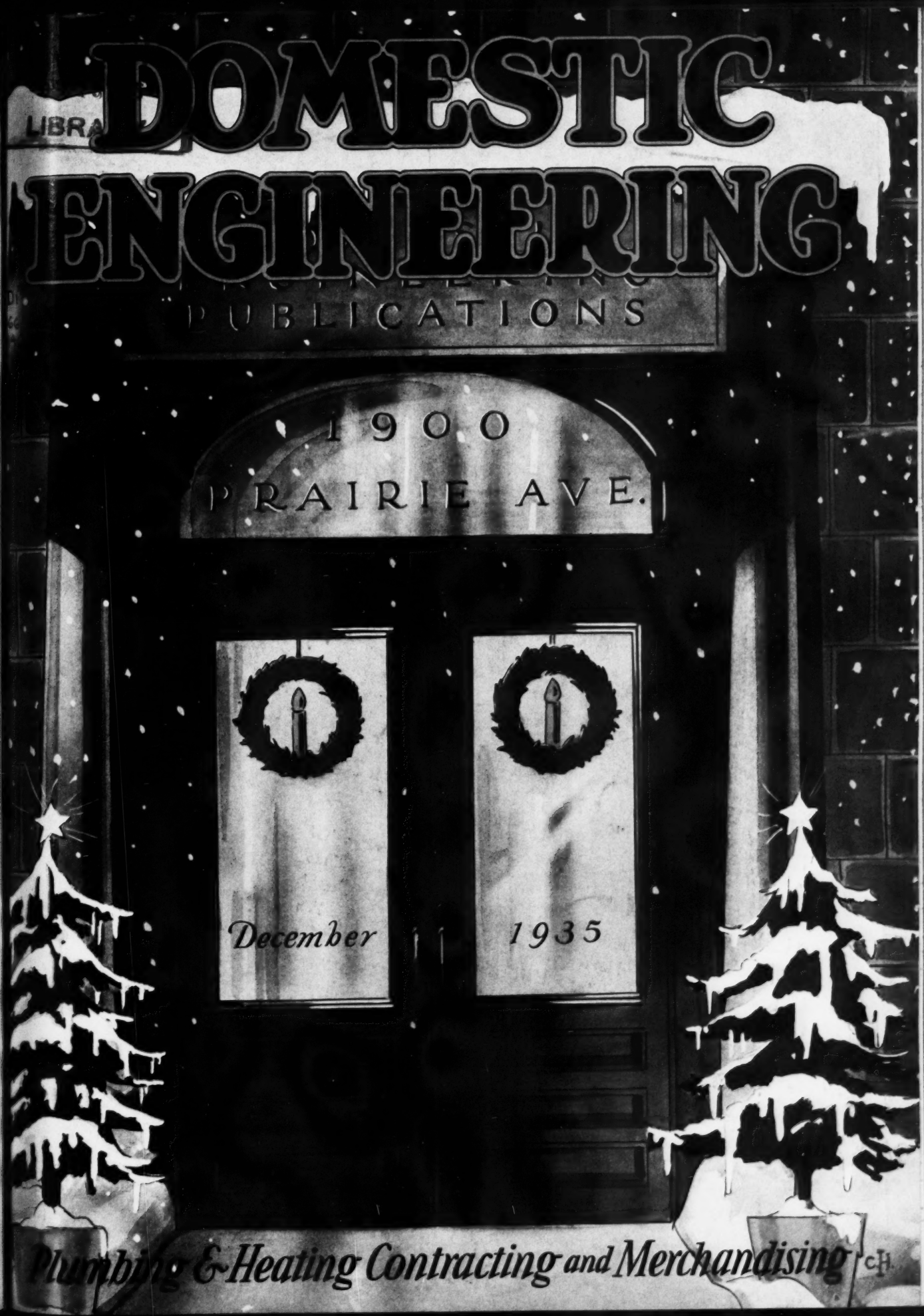

Plumbing & Heating Contracting and Merchandising

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WATER CIRCULATOR

FLOW CONTROL SYSTEM

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LOWER COST THAN VAPOR . .

THRUSH FLOW CONTROL VALVE (PATENTED)

OUTSTANDING performance! Outstanding value! Outstanding sales success! There are three reasons why you should push Thrush Flow Control Hot Water Heating System in your community. You can install it for less than the cost of gravity, less than the cost of warm air with domestic hot water supply included. There are many other reasons which we will gladly give you if you mail the coupon at the right.

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Date _____

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Please tell us how we can increase our business by recommending Thrush Flow Control Hot Water Heating System in our community.

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Address _____
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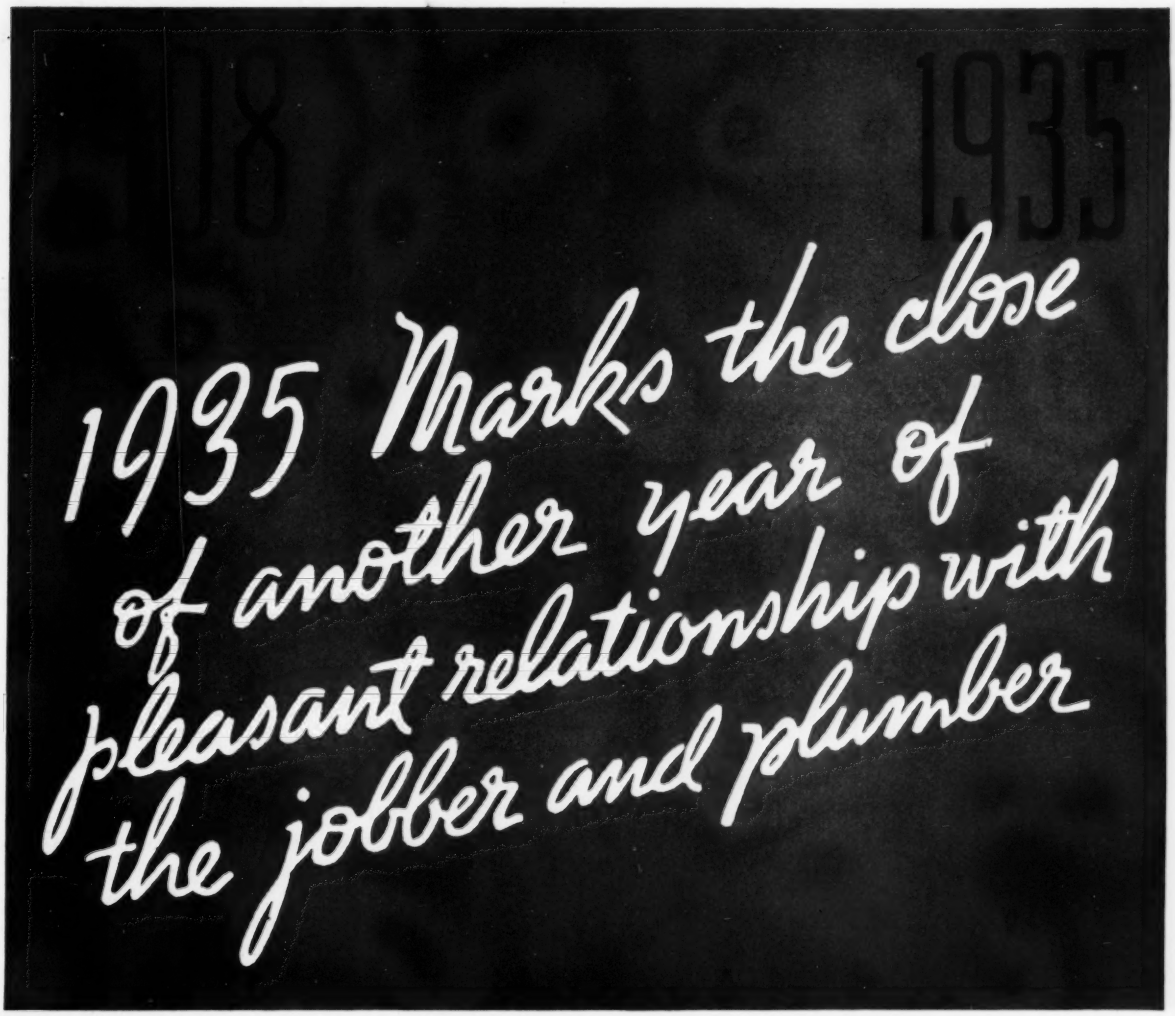

FOR 27 years VOGEL Products have been sold exclusively through the Jobbing and Plumbing Trade. This has been our policy, and by means of your enthusiastic co-operation we have been able to adhere to it without a single exception.

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DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

December, 1935

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They said one-pipe hot water systems couldn't be satisfactory—until Bell and Gossett introduced the combination of B & G Monoflo Fitting and Mechanical Circulation!

Today the B & G Monoflo System has proved itself equal in efficiency to any two-pipe system—yet much cheaper to install . . . much cheaper to operate.

What is the B & G Monoflo Fitting?

A B & G Monoflo Fitting is installed in the main at the junction of each radiator's connection. By means of an eccentric sleeve, hot water is diverted by the supply Monoflo into each radiator connection and cooled water is returned to the main by the return Monoflo. This patented device assures a balanced system, with short circuits eliminated, and with each radiator receiving its full quota of hot water at approximately the same time. Even radiators below the heating main can be circulated equally as well as any other.

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LEARN HOW TO DESIGN A B & G MONOFLO SYSTEM
Simplified instructions show how to lay out, pipe-size and install this great advance in low-cost heating. Send for booklet illustrated below.

FREE! The B & G Six Step Manual

Tells how to design and install the most modern types of high temperature, mechanically circulated hot water heating systems. Send on your business stationery for a free copy—no heating contractor can afford to be without it.

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AND IT'S ALSO A FACT that VENT-RITE VALVES *are Sold Only through* Selected Recognized Wholesalers

Full heat value for every pound of steam—that's what your customers expect of their heating plants. . . . And you can guarantee them that result by "balancing" 1-pipe systems with Vent-Rite Valves. . . . By means of an exclusive type of variable venting orifice which provides an *unlimited* selection of vent ports, the distribution of steam is positively controlled. . . . Vent-Rites can be set at the *correct* venting rate, and each radiator in the system can thus be made to heat as desired. . . . And Vent-Rites *won't be "tinkered with."* . . . The adjustment feature is not conspicuous and to adjust venting rates, it requires a wire-like tool. Once the contractor balances the system, *it stays balanced!* . . .

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Since 1932"

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VENT-RITES will *perform* excellently for you, too. Try them on your next one-pipe job—and provide maximum heating comfort to your customers, through Balanced Radiation.

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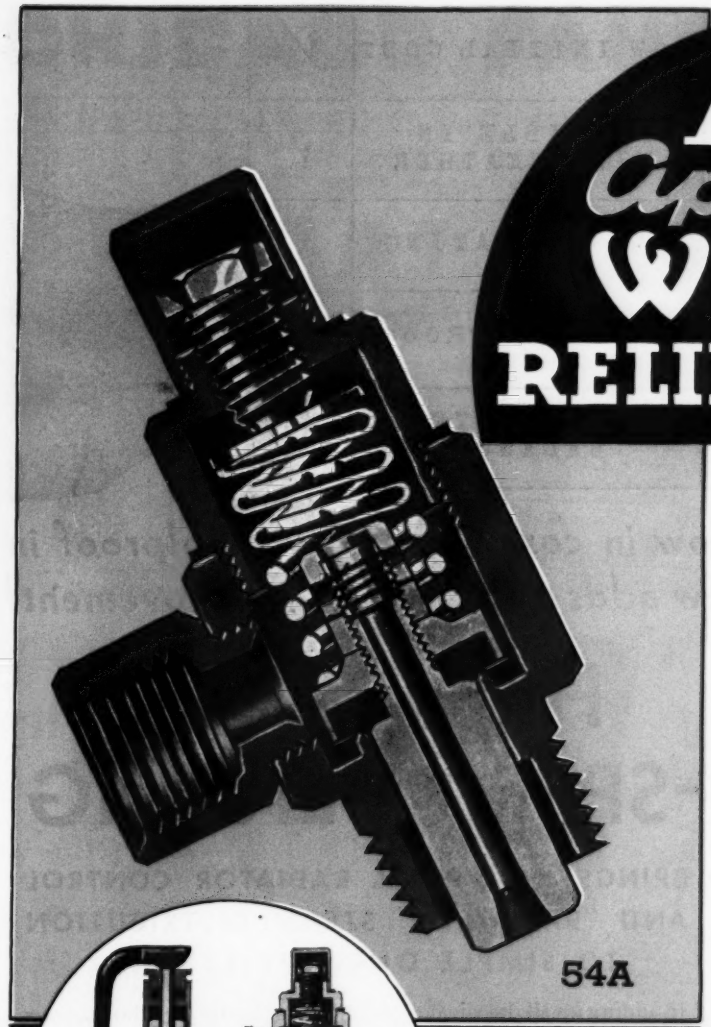
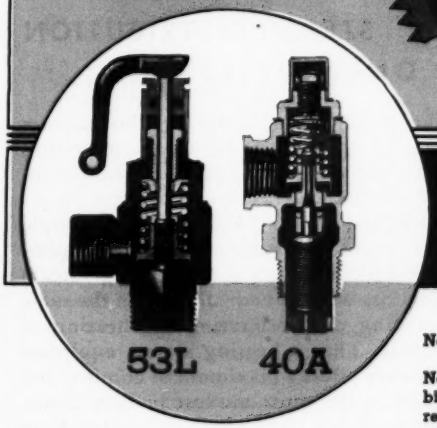
(CONTROLLED VENTING)

RADIATOR AIR VALVES

HAVE EXCELLED IN PERFORMANCE THROUGH 3 HEATING SEASONS

A.G.A. Approves WATTS RELIEF VALVES





No. 54A — FUSIBLE PLUG TYPE. Leads in the Low Cost Field. Pressure adjustable 30-150 lbs. Temp. set at 212° F.

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BRINGS INDIVIDUAL RADIATOR CONTROL AND "BALANCED" STEAM DISTRIBUTION TO SIMPLE ONE-PIPE SYSTEMS

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Hoffman Venting Valves and other products are sold everywhere by leading Wholesalers of Heating and Plumbing equipment.

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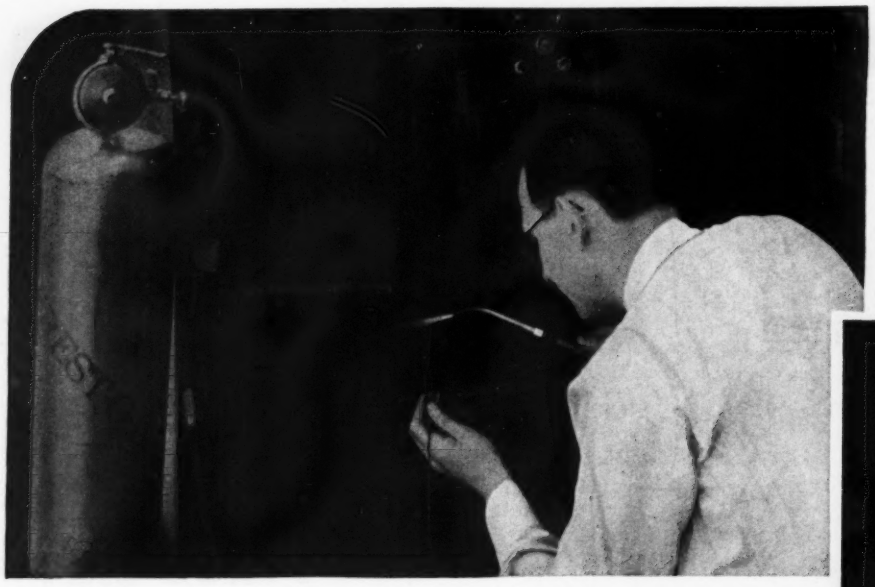

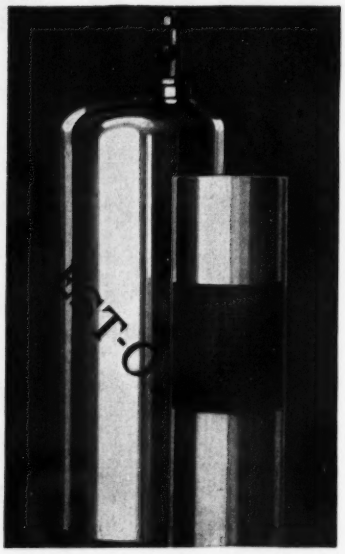

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convenient efficient economical

● Prest-O-Lite Torches have become standard equipment in all industries for soldering, brazing, splicing and heating operations. These torches are easy to handle and ready for work at all times without any preparation beforehand. This appeals to workmen and contractors alike.

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Prest-O-Lite Torches are inexpensive and sturdily built to withstand rough treatment. As a result, they will render efficient service during years of constant use.

You'll want to know all about Prest-O-Lite Torches before you start on your next job. Ask your jobber for complete details or write to the company at 30 East 42nd Street, New York, N. Y.

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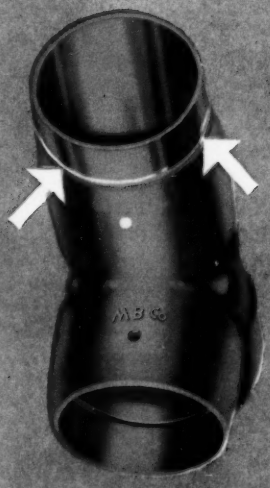
Joined for Life

by the SILVER PROOF RING

VISUAL PROOF OF A THOROUGHLY BONDED JOINT



WHEN a plumber or a steamfitter joins a section of copper pipe to STREAMLINE fittings, he is actually doing a lifetime job. Rust and leaking water will never start "divorce proceedings" here. The "knot is tied" for good.

STREAMLINE is a good "fixer" of pipe line "family quarrels," too. When a pipe or fitting "fail in their duty" as "good providers" of full flow capacity and start to "hold out" by leaking and delivering rust clogged water, the trouble begins. STREAMLINE is "the friend of the court" and can always smooth out "domestic" pipe line difficulties for good and for all.

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And what is the result for you? . . . Instead of getting a small repair job on which there is scarcely any profit, you can get a replacement job that actually does make money for you.

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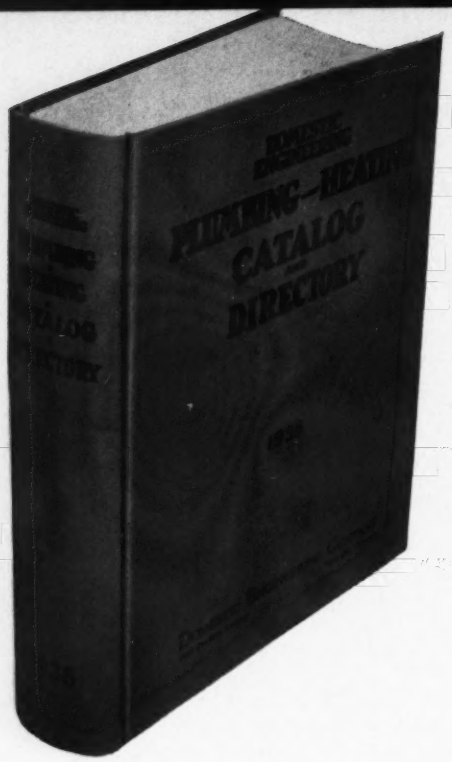
VISUAL PROOF When the plumber or steamfitter makes a joint with a STREAMLINE Fitting and Copper Pipe he can tell at a glance that the joint is leak-proof and permanently tight, by the appearance of the solder as a complete ring at the end of the fitting. It is his visual evidence of work well done.

STREAMLINE
PIPE AND FITTINGS
PORT HURON, **CO.** MICHIGAN
DIVISION OF MUELLER BRASS CO.



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Combined CATALOG and DIRECTORY *of the* Plumbing and Heating Industry

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1900 Prairie Avenue, Chicago, Illinois

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Street ..... City and State .....

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and SMILE, SMILE, SMILE, *for* 1936 WILL BE A BUSY YEAR FOR YOU

It's time to shift into a big smile, for more dollars will be spent for plumbing in 1936 than have been spent in any year since 1931. To the aggressive, wide-awake, plumber—that can mean 3 things—more sales—more work—more income.

Hays is right at your elbow with a greater line of well built brass goods than ever before — everything you need from "Street to Bath." The Smartcraft Sink Faucet —the Plus-Shower — the Clean Spray Head—the Shelfset Laundry Tray Faucet—the beautiful modern Gem line of Built in Fixtures and of course the complete line of Hays Double Seal Fittings. With hundreds of other staples, Hays is ready to serve you better than ever.

Back up your skill with dependable brass that satisfies on 3 big counts. Quality—Appearance and Price. Fellows, let's go places together in 1936. Be sure to have the Hays Catalogue "Street to Bath" at your finger tips. Write for copy.

HAYS MFG. CO. **ERIE, PENNA.**

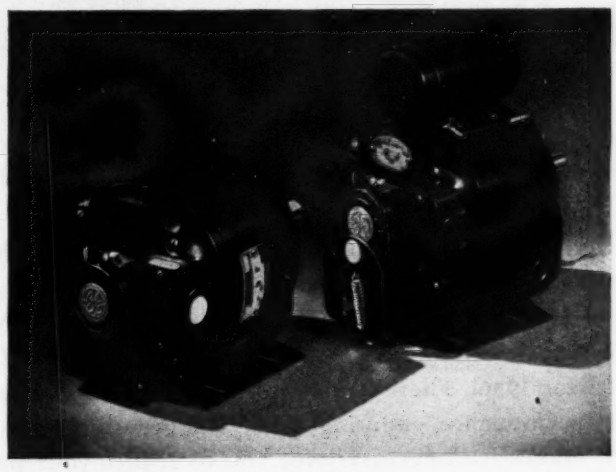
ONE POLICY SINCE 1869

1. A diversified line of brass, copper and iron products to meet the plumbing requirements of your trade.
2. Uniformly high quality standards for every one of our products.
3. A price basis that enables you to compete aggressively with reasonable profit return.
4. Selling helps of reasonable amounts on Hays' products, thru your wholesaler, for the asking.
5. A live and let live policy of manufacturer to wholesaler, to master plumber.

PLUMBING BRASS
BATH FIXTURES
COPPER PLUMBING
GAS SERVICE GOODS
WATER SERVICE GOODS
IRON PRODUCTS
TAPPING MACHINES

HAYS

TO MAKE SELLING EASIER



Equip WITH G-E MOTORS

WHEN you present your next installation proposition, tell the prospect that you would like to use G-E electric equipment—motors, control, cable, etc. You won't have to sell him on their desirability. He's already convinced that G-E products are *high-quality* products. *The reputation of G-E equipment will help you sell.*

For example, General Electric offers you . . .

CARE-FREE-MOTORS . . . EASY TO INSTALL . . . SIMPLE TO MAINTAIN . . . DEPENDABLE

Type KH resistance, split-phase motors for belt-driven fans and blowers requiring up to ¼ hp; Type KC motors for the same class of service where the horsepower required is from ⅓ hp up (in the fractional-hp range). Both types have the following advantages:

LARGE OIL SUPPLY — Minimizes lubrication attention—once-a-season oiling is all that's needed.

BELT TIGHTENER (optional)—This new, radically different belt tightener depends on torque, and not on springs, for its action. It eliminates service calls for belt tightening or premature belt replacement—saves you money on that feature alone.

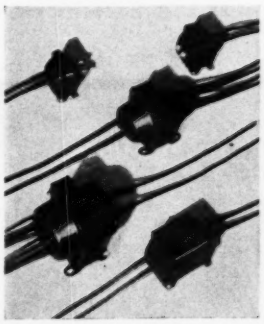
CUSHIONED POWER—Helps your installation set an agreeably new standard of quietness. Durable, springy rubber mounting, securely clamped in place, isolates vibration—eliminates unnecessary noise.

You can get G-E motors—small and large—in every type and size for every air-conditioning need. Our motor specialists—in a G-E office conveniently near you—will gladly help you choose. General Electric, Dept. 6B-201, Schenectady, New York.

070-107

OTHER AIDS TO SALES

G-E CONTROL TRANSFORMERS



Choose G-E control transformers for safety, convenience, and simplicity of wiring wherever small solenoids, relays, motors, lamps, and similar accessories needed for an air-conditioning installation must be operated at various voltages—stepped down from the lighting circuit.

General Electric's complete line of small control transformers makes operation at reduced voltages as simple as a, b, c.

There are standard G-E control transformers for many applications; your requirements for special voltages can be economically and quickly met from an extensive line of standard parts. Why not ask us for information on these control transformers?

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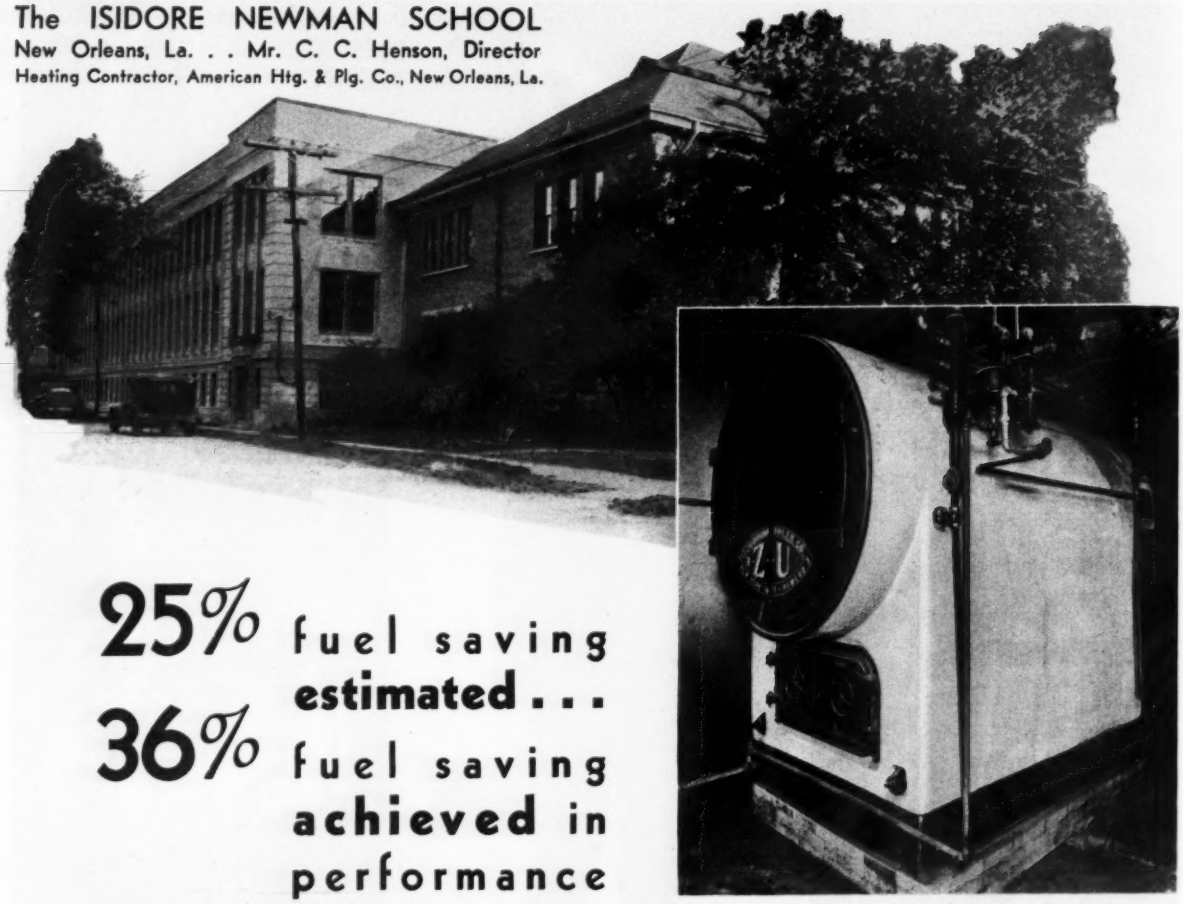
General Electric's small motor-starting switch meets the demand for positive protection for fractional-horsepower motors.

Housed in a strong, steel case with an attractive aluminum face plate, it is easily installed—convenient conduit knockouts are located in both top and bottom. It is equipped with unusually large, pure-silver contacts—an assurance of long life and trouble-free service. It has snap action, which prevents slow opening or closing, and also prevents burning of contacts.

Write for complete details.

GENERAL ELECTRIC

The ISIDORE NEWMAN SCHOOL
New Orleans, La. . . . Mr. C. C. Henson, Director
Heating Contractor, American Htg. & Plg. Co., New Orleans, La.



25% fuel saving estimated . . .
36% fuel saving achieved in performance

The FITZGIBBONS R-Z-U STEEL BOILER

puts this school on a basis of true heating economy

At the Isidore Newman School, a quality institution of learning at New Orleans, La., the question of heating economy was brought up by the Fitzgibbons representative, who assured the school authorities that in replacing their cast iron boiler installation with a Fitzgibbons R-Z-U steel boiler, a saving of 25% in fuel oil would be gained. The change was made in 1934.

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The Fitzgibbons R-Z-U has been called a "boiler-man's boiler"—and truthfully so, since it embodies all of the experience and traditions gained in our manufacture of boilers during an unbroken period of half a century of building steel boilers exclusively. The R-Z-U is designed in types for any fuel and any firing method, manual or mechanical.

Schools, apartments, hotels, churches, hospitals, institutional and industrial buildings generally, invariably show maximum economies in heating when the R-Z-U is employed. Get full details—Write for the R-Z-U Catalog. Ask for Catalog D.

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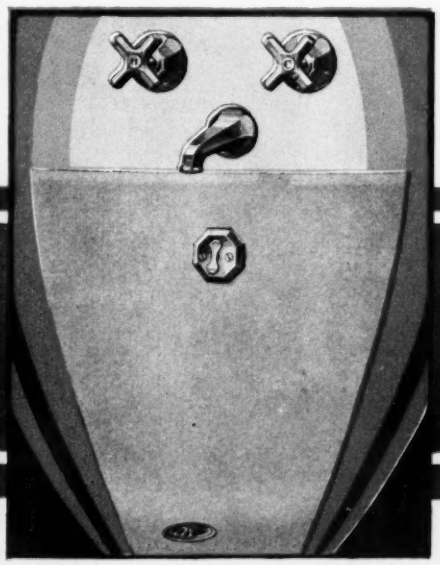
	PER CENT OF PROFIT ON YOUR SELLING PRICE						
Cost to you	13 4/100%	16 2/3%	20%	25%	33 1/3%	40%	50%
Cost to you	15%	20%	25%	33 1/3%	50%	66 2/3%	100%
	PER CENT OF PROFIT ON YOUR COST						

Home building is certain to zoom in 1936—authorities claim it! Sensing the prospect of a lot of jobs for you Republic accepted the challenge to provide you one more certain source of good profits. The TRUART Line in turn challenges your estimate of real worth. Talk the situation over with your jobber or your jobber's salesman. Get their idea about how the TRUART Line fits your jobs. The profit picture will warm your heart. Ask them too, for your copy of Republic Profit Calculator, a device you'll find handy in figuring profit margins. Figure Republic TRUART Fixtures in your bids if you want jobs with a profit in them.

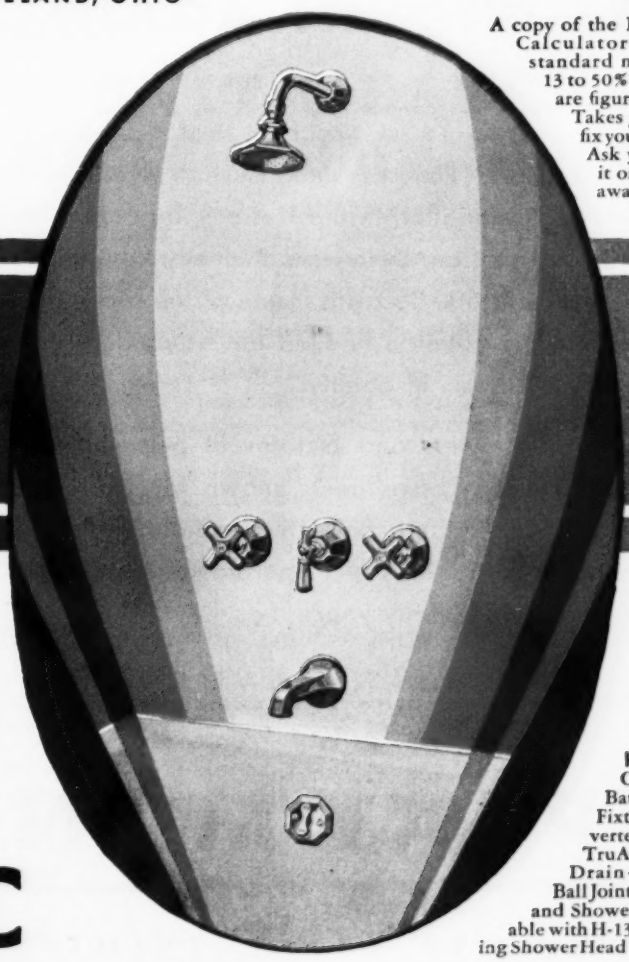
THE REPUBLIC BRASS COMPANY
1623 EAST 45th STREET • CLEVELAND, OHIO

Free!

A copy of the Republic Profit Calculator for you! All standard mark-ups from 13 to 50% on selling price are figured out for you. Takes just a second to fix your profit margin. Ask your jobber for it or write us right away.



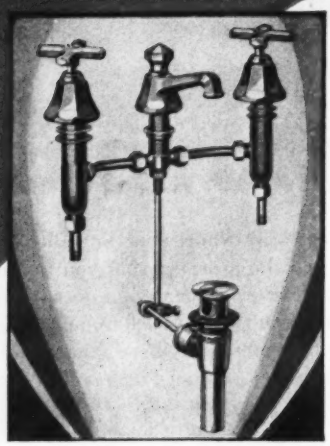
H-3424 TRUART—Bath Fixture with Over-the-Rim Supply 1½" TruArt Trip Lever Drain.



H-3430 TRUART Combination Bath and Shower Fixture with Diverter Valve, 1½" TruArt Trip Lever Drain—4" TruArt Ball Joint Shower Head and Shower Arm. Available with H-1358 Self Cleaning Shower Head if so specified.

REPUBLIC
BRASS GOODS

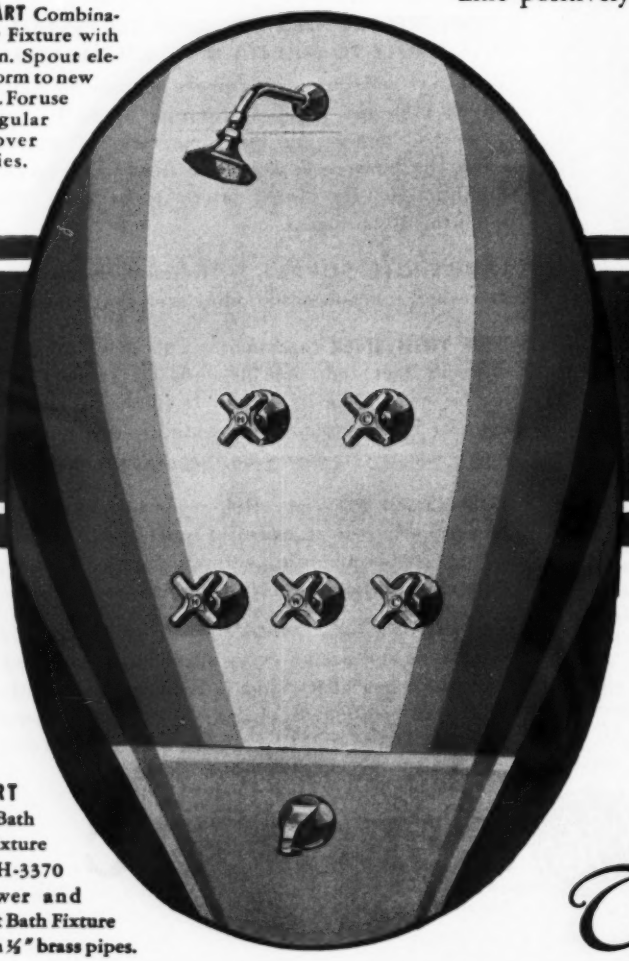
. . . Put in Your Bid for a
on Brass Goods for 1936



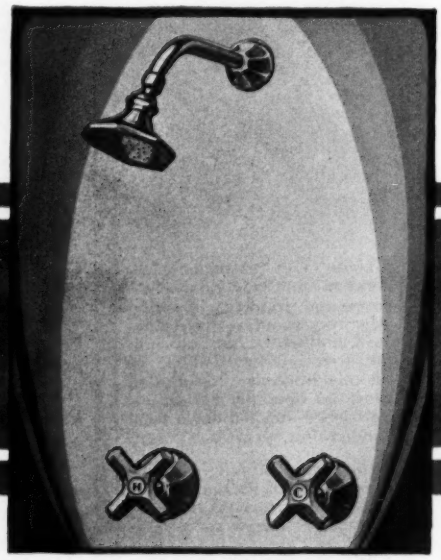
"AM I GOING TO SQUEEZE THROUGH?" No sooner is the job landed than this confronts you. Squelch this worry by taking a wider margin on brass goods. You can get it by using the Republic TRUART Line redesigned and revalued for 1936. There's no doubt about it! Eye appeal, faultless performance, enduring quality—a generous quantity of each makes it unnecessary for you to reduce your price below the amount you would expect to get even if these fixtures were a third more costly than they are, actually.

No longer do you have to take the chance of "just squeezing through". Go way over on the other side and take a wider margin of profit. It's there for you. The Republic TRUART Line positively provides it!

H-3110 TRUART Combination Lavatory Fixture with Pop Up Drain. Spout elevated to conform to new sanitary codes. For use on either regular or hooded over flow lavatories.



H-3402 TRUART Combination Bath and Shower Fixture consisting of H-3370 TruArt Shower and H-3400 TruArt Bath Fixture connected with ½" brass pipes.



H-3370 TRUART—Concealed Two Valve Shower with 4" TruArt Ball Joint Shower Head. Available with H-1358 Self Cleaning Head if so specified.

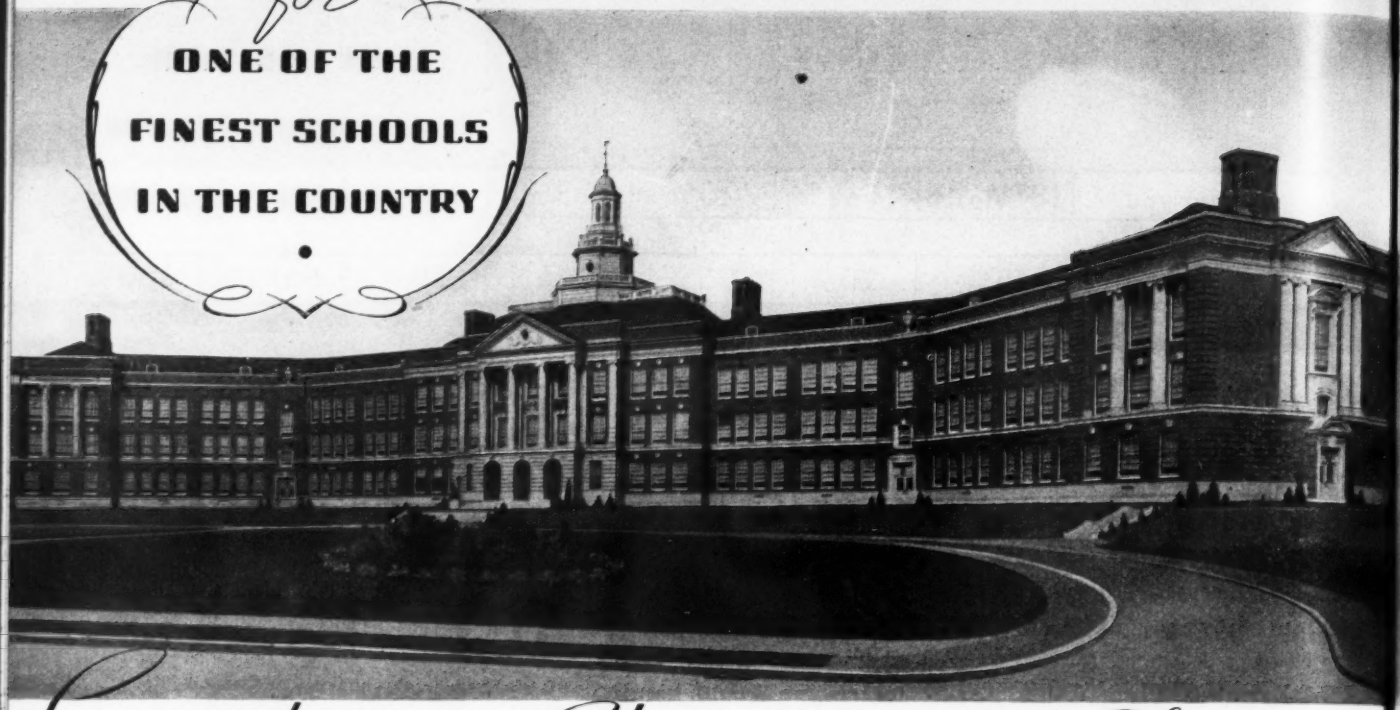
REDESIGNED *and*
REVALUED *for* **1936**

The **TRUART** *Line*
by **REPUBLIC**

Architect: E. William Martin; General Contractor: Karno-Smith Construction Co.; Plumbing Contractor: Bulman Bros.

for

ONE OF THE FINEST SCHOOLS IN THE COUNTRY



Speakman Showers and Fixtures

ARE CHOSEN AGAIN!

WE are proud of the fact that Speakman Showers, Fixtures and Flush Valves were chosen for installation in the Pierre S. Du Pont High School, Wilmington, Delaware. Recently completed at a cost of $1,500,000, this is one of the really fine schools in the country, and all the equipment was chosen on a basis of quality.

Speakman Showers and Fixtures fit perfectly into this picture. They have been known for years for their high quality and complete dependability, and in this new school they will operate efficiently and economically for many years.

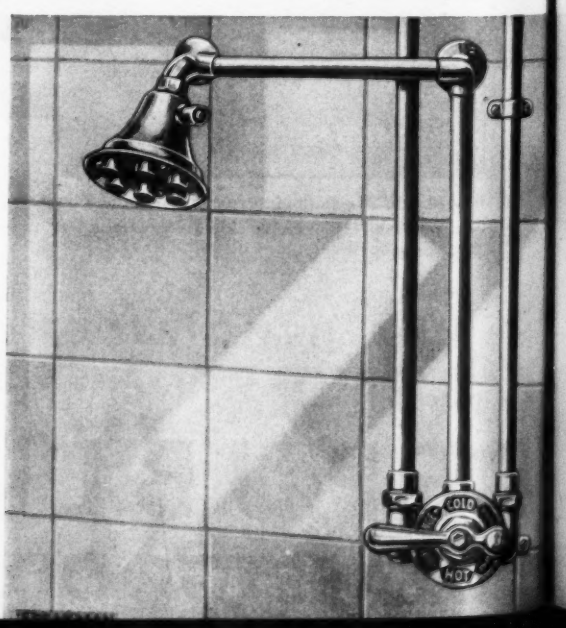
SPEAKMAN COMPANY
Wilmington Delaware

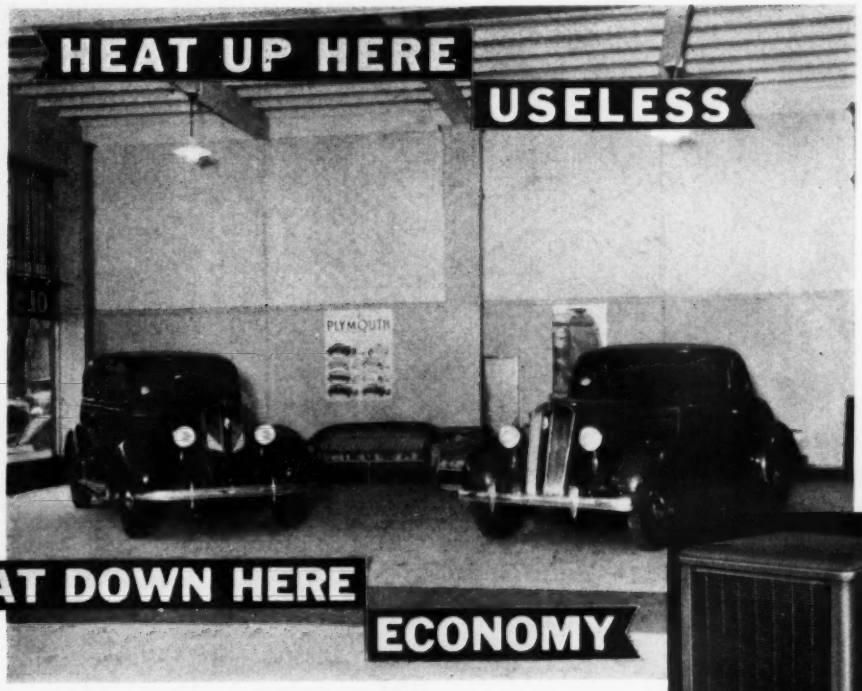
SPEAKMAN

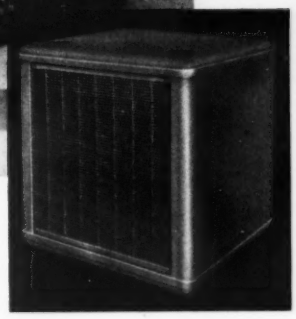
Showers & Fixtures

QUALITY FIXTURES SINCE 1869

K-3110 — Speakman Mixometer Shower — Exposed Ty







LA CROSSE TRANE WISCONSIN

UNIT HEATERS PROVIDE ECONOMY HEAT

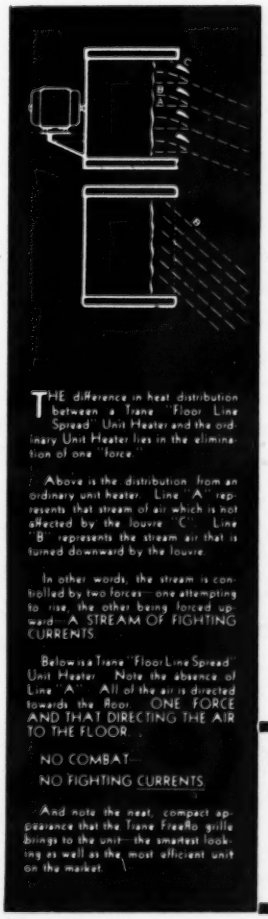
Your customers want a heating system which will spread heat down in the living zone. That is why TRANE "Floor Line Spread" Unit Heaters are so popular. They spread the heat in the living zone and spread it so effectively that fuel bills will be cut as much as 25 to 30% on many installations.

"Floor Line Spread" is an exclusive feature of TRANE Unit Heaters and is one of the chief reasons why TRANE Unit Heaters are the leaders in the space heating field.

Along with the exclusive feature of TRANE "Floor Line Spread" is the famous TRANE Heat Transfer Coil. This combination of two outstanding features is the reason why your customers will respect your recommendations on TRANE Unit Heaters.

There are hundreds of styles and types of TRANE Unit Heaters to meet every heating requirement that you may have. In the Propeller Fan Type there is the De Luxe and UH models; and in the Torridor Series there is a complete range of wall, ceiling and floor model Blower Fan Type Units.

Use the coupon below for complete information on the TRANE Unit Heater line.



THE difference in heat distribution between a Trane "Floor Line Spread" Unit Heater and the ordinary Unit Heater lies in the elimination of one "force."

Above is the distribution from an ordinary unit heater. Line "A" represents that stream of air which is not affected by the louvre "C". Line "B" represents the stream air that is turned downward by the louvre.

In other words, the stream is controlled by two forces—one attempting to rise, the other being forced downward—A STREAM OF FIGHTING CURRENTS.

Below is a Trane "Floor Line Spread" Unit Heater. Note the absence of Line "A". All of the air is directed towards the floor. ONE FORCE AND THAT DIRECTING THE AIR TO THE FLOOR.

NO COMBAT—
NO FIGHTING CURRENTS

And note the neat, compact appearance that the Trane FreeRo grille brings to the unit—the smartest looking as well as the most efficient unit on the market.

The TRANE Company :: La Crosse, Wisconsin

Also TRANE Company of Canada, Ltd.—Toronto, Ontario

The Trane Company
Dept. DE 12
La Crosse, Wisconsin

Please send complete data on TRANE Unit Heating Systems.

Name .....

City .....

State .....

This beautiful lavatory will have a wide popular appeal for boudoirs and bedrooms — in addition to the regular bath-room equipment. Model number 713 E-M with green handles.

BRIGSTEEL

Beautyware

IS NOW BEING DEMANDED BY THE PUBLIC

No other development in the plumbing field has ever secured the widespread publicity which has been accorded the new Brigsteel Beautyware. Newspapers from coast to coast, as well as the editors of women's magazines, have been quick to grasp the tremendous appeal of this new product. Their news stories and articles are stimulating renewed interest in plumbing fixtures, in the modernization of bathrooms and kitchens and in the opportunities which Brigsteel Beautyware now makes available in new home construction.

Home economics editors, architects and the plumbing trade have all helped to spread the news of this sensational new development, with the result that even before Briggs' national advertising gets under way, millions have learned of the remarkable advantages possessed by Brigsteel Beautyware. Master Plumbers everywhere are noting a growing public demand.

Drawn for Revere Copper and Brass Incorporated by Edward P. Couse

Call to Meeting

One of Paul Revere's first copper and brass assignments was to recast the bell for the Old North Church, the church where the warning lanterns in the belfry started Revere on his memorable ride to Lexington. When the bell was finished, its tone was so wonderfully clear and true that similar orders came thick and fast. In all, 396 bells were cast for various New England churches; seventy-five of these are known to be still in use. But Revere bells, brass cannon, copper spikes and rivets were soon supplemented by a still greater achievement.

In 1801, Revere mastered the secret for rolling copper, a process never before accomplished in America. Copper sheets from his new mill soon protected the hull of the famous frigate "Old Ironsides," the roof of the Boston State House, and many other public and private buildings up and down the coast.

Paul Revere's ability as a copper and brass manufacturer, inventor, and industrialist is still serving America. Through succeeding generations, the original firm of Paul Revere & Son has grown and consolidated to the present nation-wide organization of Revere Copper and Brass Incorporated.

The Revere heritage of leadership in discovering new applications for copper and brass has also been continued. For example, to meet today's needs in the plumbing, heating and air conditioning industry, Revere offers the following products: Copper Water Tube and Streamline Fittings, Revere Brass Pipe, Red-Brass Pipe, Copper Pipe (S.P.S.), Herculoy, Sheet Copper and Leadtex (lead-coated copper).

We are happy to take this opportunity to wish you a very Merry Christmas and a Bright and Prosperous New Year.

Revere Copper *and* Brass

FOUNDED BY PAUL REVERE 1801

INCORPORATED

EXECUTIVE OFFICES: 230 PARK AVENUE, NEW YORK CITY · MILLS: BALTIMORE, MD. · TAUNTON, MASS.
NEW BEDFORD, MASS. · ROME, N. Y. · DETROIT, MICH. · CHICAGO, ILL. · SALES OFFICES IN PRINCIPAL CITIES

Colorful, modern bathrooms are no longer confined to the large, expensive homes. The illustration above suggests a Beautyware Bathroom that was designed especially for modest homes —convincing proof of the opportunity afforded by Beautyware to achieve outstanding designs at low cost. The Models shown are — Bathtub 770 A-C; Lavatory 713 A-C; Toilet 800 A-C.

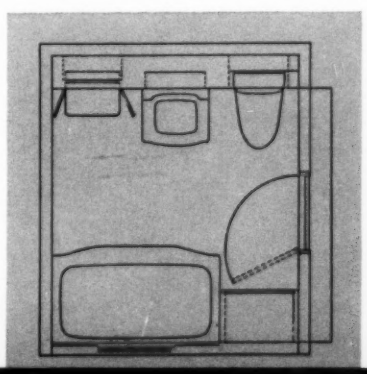
Shipments are going out

NEW BEAUTY AND UTILITY FOR HOMES AND APARTMENTS

Brigsteel Beautyware carries the endorsement of architects and engineers in every section of the country. Many of the leading plumbing wholesalers have already taken the Brigsteel franchise and ordered initial shipments. The National Association of Master Plumbers, at the 53rd Annual Convention in Chicago this year, endorsed it.

Brigsteel Beautyware has been tested and approved by leading scientists in both the metallurgical and ceramic industries. It has been accepted by the Federal Housing Administration of the United States Government and has been installed in many of the homes built under the F. H. A. plan with Government loans and to Government specifications.

Remember that Brigsteel Beautyware weighs but *one-third* as much as comparable cast iron and vitreous china fixtures, while its strength and durability are greater. Remember that Brigsteel Beautyware offers your customers more value for their money—in newer styles, in longer life, in combinations of colors hitherto unavailable, in high-lustre, all acid-resisting porcelain enamel.



The floor plan shows the placing of the different Beautyware Fixtures that are illustrated in the beautiful bathroom design shown above.

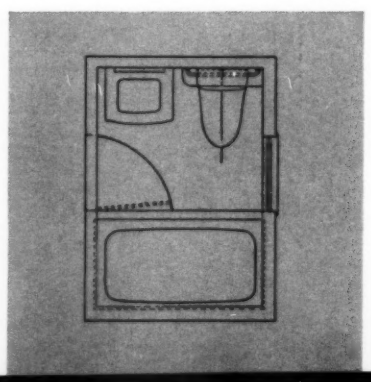
Briggs' architects have treated this small modern bathroom as an interior worthy of the most careful consideration. The sparkle, lustre and color of these striking Beautyware fixtures give to this room a new attractiveness and charm at surprisingly low cost.

Orders are flowing in

BEAUTYWARE BRINGS NEW PROFITS TO MASTER PLUMBERS

Orders for Brigsteel Beautyware are flowing into the Detroit plant from every section of the Union. Master Plumbers are sensing the impending demand. After years of development and tests Brigsteel Beautyware is now ready for the public. Briggs is now ready to tell the good news of this remarkable development in plumbing fixtures to home owners and builders as well as to the trade. Countless new homes with specifications calling for the installation of Brigsteel Beautyware are under construction. Briggs is daily shipping to wholesalers in every section of the country—filling orders which threaten to far exceed present manufacturing capacity.

The vast Detroit plant of the Plumbing Ware Division of the Briggs Manufacturing Company is humming with activity. Already plans are being made to increase production capacity. All authorities agree that next year will witness a widespread revival in building—reaching a volume five or six times as great as 1935. Estimates on new home construction for 1936 run from 250,000 to 500,000 homes, which represents a tremendous market and a big opportunity for Master Plumbers. Briggs will endeavor to make prompt shipments, but foresees a shortage. Orders will be filled in the early part of 1936 on a "first come first served" basis.



On the right is another plan of the bathroom illustrated above. This arrangement is ideal for small homes—a combination of utility and beauty. Models illustrated—Bathtub 763 F-G; Lavatory 715-F; Toilet 800 F-G.

BRIGSTEEL

Beautyware

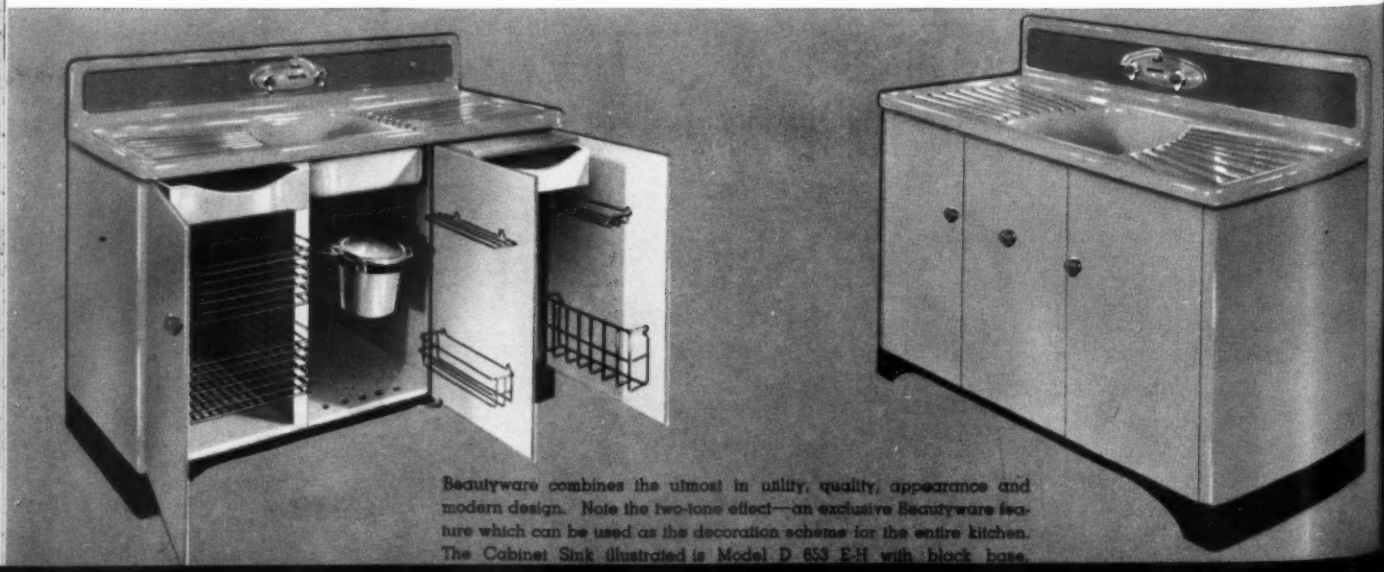
Acid-resisting porcelain enamel on Armco Ingot Iron is a familiar product to most home owners as available on many household appliances, including refrigerators, washing machines, work tables and various kitchen utensils. But it is entirely new in the plumbing industry! It offers effects never before possible with costly, old-fashioned methods of manufacture. It brings striking new smartness to kitchens and bathrooms—fixtures in color, once an expensive luxury are now possible in homes of modest cost.

Combinations of color never before available at any price will help you to enlarge the market for fixtures and for your services. The light weight, great strength and beautiful designs and colors of Brigsteel Beautyware now make it possible for you to show architects and builders how to achieve new and striking effects for far less cost than anyone ever dreamed would be possible.

If you are not already fully familiar with this revolutionary new development in plumbing ware, ask your wholesaler or write Brigsteel, Detroit. Send for the new Brigsteel Beautyware Brochure *"Personal Luxury in the Bathroom and Kitchen."*

Plumbing Ware Division

BRIGGS MANUFACTURING COMPANY • DETROIT



Beautyware combines the utmost in utility, quality, appearance and modern design. Note the two-tone effect—an exclusive Beautyware feature which can be used as the decoration scheme for the entire kitchen. The Cabinet Sink illustrated is Model D 653 E-H with black base.

THE classified telephone book brings in new business, increases sales.

An interesting bit of proof comes from a retailer in Chattanooga. He writes: *"We made a recent check of 44 of our new accounts . . . All 44, or 100%, stated that they were directed to us through the classified pages of the telephone directory."*

Many dealers have written about sales that were traced to the classified.

Are you taking full advantage of this sales opportunity? Are you listed in the classified under *all* the major products and services you sell? . . . under the trade marks of the advertised brands you carry?

See that you are *adequately* represented in the next issue. Ask your local Directory Representative.

CLASSIFIED TELEPHONE DIRECTORY

Furnaces—(Cont'd)

HOLLAND FURNACES

Repairing and cleaning all makes of heating systems. Call an experienced Holland Heating Engineer to solve your heating problems. Telephone our local branch.

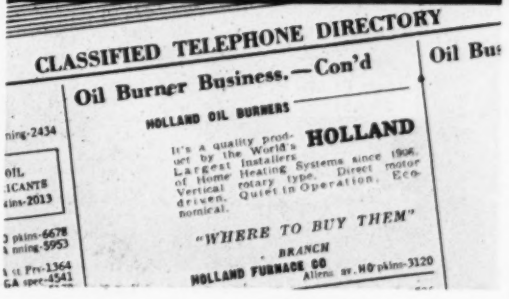
HOLLAND Vaporaire HEATING

"WHERE TO BUY IT"

BRANCH

HOLLAND FURNACE CO
1512 Jefferson av...GA rl84-7796

Two typical "Where to Buy It" listings. Many other types of listings are offered in the classified.


CLASSIFIED TELEPHONE DIRECTORY

Oil Burner Business.—Con'd

HOLLAND OIL BURNERS

It's a quality product by the World's Largest Installers of Home Heating Systems since 1906. Vertical rotary type. Direct motor driven. Quiet in Operation. Economical.

HOLLAND

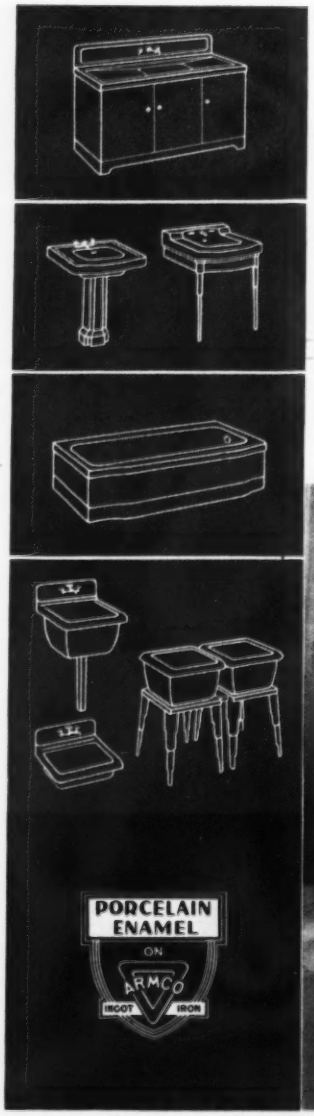
"WHERE TO BUY THEM"

BRANCH

HOLLAND FURNACE CO
Allens av. HO phins-3120

Of course you're interested in the new

FORMED METAL PLUMBING WARE



Not just new but definitely superior as well, formed metal plumbing ware is the outcome of a three-industry collaboration . . . *Steel* developed the flawless sheets demanded by the deep draws involved. *Metal stamping* devised the giant presses, the accurate dies which form the sheets into light, graceful, strong tubs, sinks and lavatories. *Ceramics* created the improved wet-process, acid-resisting porcelain enamel which beautifies this modern and in every way better ware.

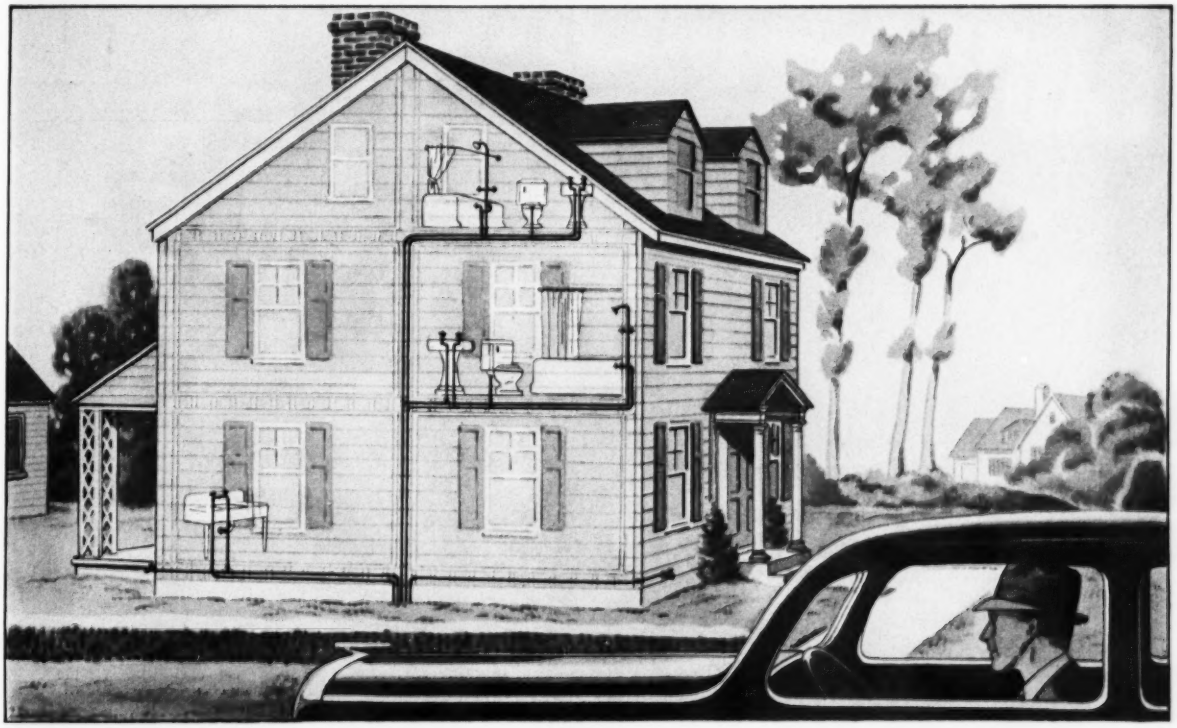
Small wonder that a product should result which gives the master plumber a source of new profit, to say nothing of freedom from certain obvious drawbacks of heavy, cumbersome plumbing ware. Consider the latter first . . . Formed metal ware excels in strength, yet cuts weight to nearly one-third. This means you save time and man-power. And porcelain enamel on formed metal ware is smoother, easier to keep clean, and retains its higher lustre much longer. Harmonizing color combinations and color trim are also possible in the individual piece.

Profit is greater, starts with immediate saving in labor costs through ease of handling. Sales are made with less effort in less time, because this new and better kind of plumbing ware is easier to sell, and because the famous Armco INGOT IRON label on formed metal ware taps a vast reservoir of existing public acceptance.

Of course you're interested—as you are in anything that is new, better, more profitable and headed for certain leadership. Ask your plumbing supply house for additional information—or write directly to us.

THE AMERICAN ROLLING MILL COMPANY
Executive Offices · Middletown, Ohio

SUPPOSE YOU HAD AN X-RAY EYE!



YOU could tell in a minute just what repairs and replacements were needed in every building in your neighborhood. And that's the basis of the most successful sales — a knowledge of the *individual* needs of every building. If Mr. Jones needs new lavatory fittings, you won't have much luck trying to sell him flush valves. But if you visit him with fitting samples, you're on the ground that interests him.

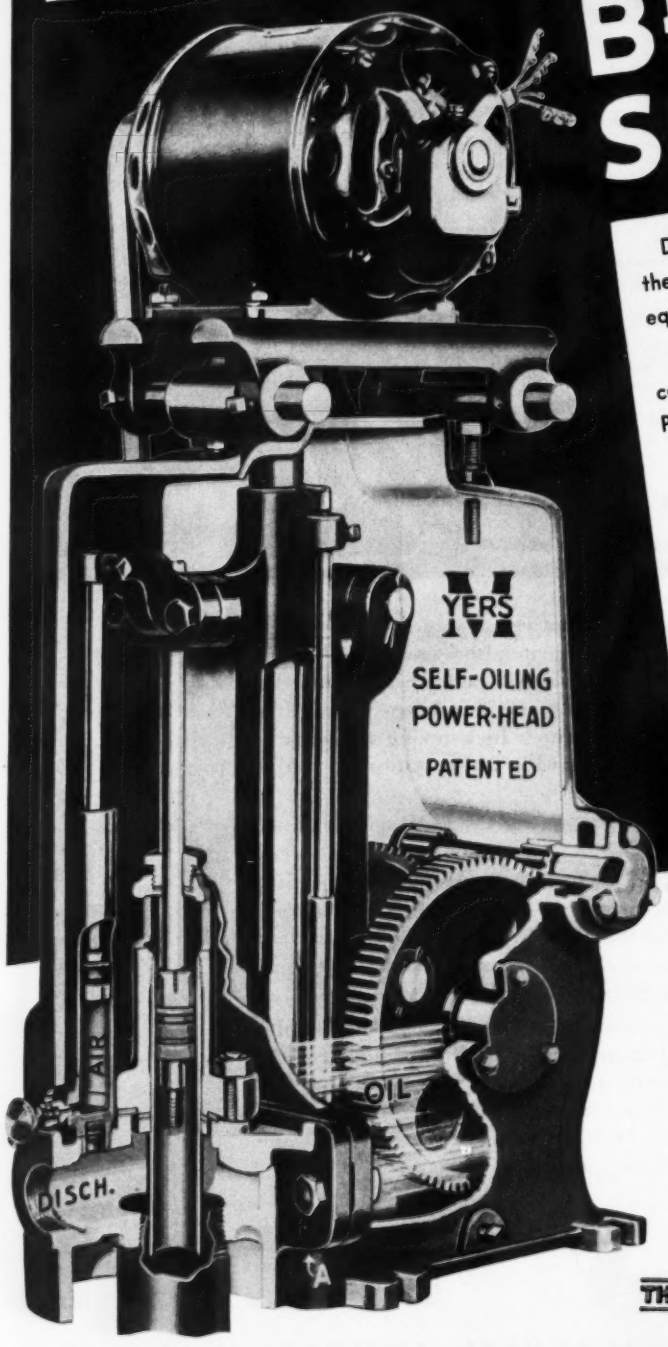
To help you aim your sales efforts at the bull's-eye in every home or building, Scovill has prepared some "Business Finder" cards to give you a permanent record of the needs — and future needs — of each individual prospect. A few check marks on a card provide all the information you need to base a sales talk for any owner. Small and sturdy, they are made to fit your pocket, and can be filed conveniently.

"Business Finders" are just one of the many Scovill sales helps that illustrate the famous Scovill policy of helping the plumber. They can lead you to sales and fair profits — just as Scovill quality fittings can. We'll send you some "Business Finders" for the asking. Include your jobber's name and address — they'll be delivered promptly.

SCOVILL

SCOVILL MANUFACTURING COMPANY
***WATERVILLE DIVISION* • WATERVILLE, CONNECTICUT**
SCOVILL FLUSH VALVES • SHOWER, BATH, AND LAVATORY FITTINGS
MISCELLANEOUS PLUMBERS' BRASS GOODS

Built for MORE YEARS of BETTER SERVICE



Dependable performance — that's what the name MYERS stands for in pumping equipment.

Regardless of what others may do, we continue to build Myers Self-Oiling Power Pumps for more years of better service.

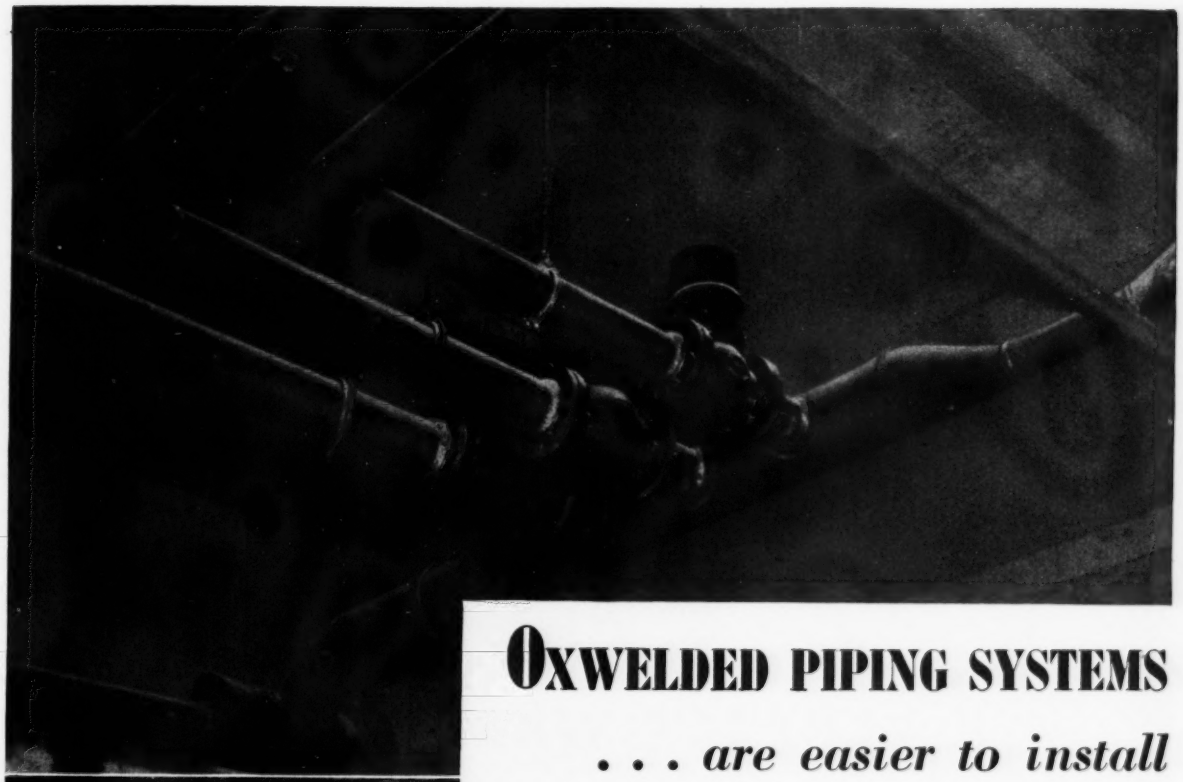
Our quality standards speak for themselves in excellence of materials, superiority of construction, outstanding improvements and fine finish. Our style and size range is widely diversified. Our prices are exceedingly favorable.

With this splendid combination of support sales are satisfactory and profitable. Our new catalog is ready. Ask for a copy of it.

"When you think of WATER think of MYERS Pumps and Water Systems"

THE F.E.MYERS & BRO. CO.
ASHLAND, OHIO.

PUMPS – WATER SYSTEMS – HAY TOOLS – DOOR HANGERS



On the installation shown above, the contractor fabricated by oxy-acetylene cutting and welding the bends, reducers, and other specials in his shop and installed them with tie-in welds on the job. The lines and bends were installed with a proximity which would have been impossible by other methods of joining. The insulation contractor estimated a 30 per cent saving on insulation labor because it was a welded installation.

OXWELDED PIPING SYSTEMS

. . . are easier to install and cheaper to maintain

● The economy of oxy-acetylene welded piping for power or domestic and industrial heating purposes extends all along the line. Oxwelded piping systems are cheaper and easier to install, and, once installed they are leakproof and lasting. There are no maintenance expenses on a system put in by this modern process.

Let Linde Help You

The Linde organization can help you with your welded piping projects from the first blue prints to the finish of the actual installation. Linde customers benefit from the closely coordinated research, development and field engineering facilities of the Linde organization. The Linde representative, who assists you as a part of Linde Process Service, makes the results of this research, development and field experience available to your organization.

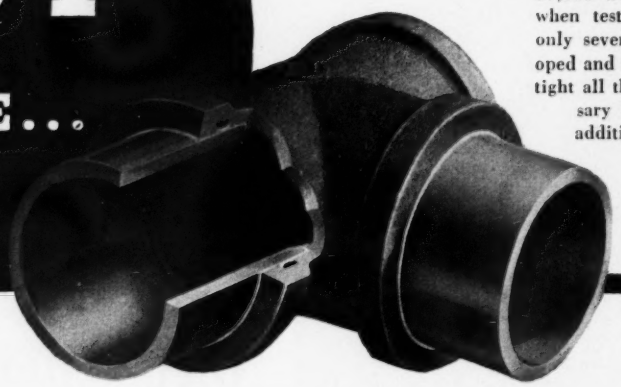
You can arrange for this cooperation by communicating with the nearest Linde Sales Office or with 30 East 42nd Street, New York, N. Y. Address: The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation.

Everything for Oxy-Acetylene Welding and Cutting

LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES FROM UCC LINDE UNION CARBIDE

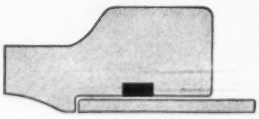
PRODUCTS OF UNITS OF UNION CARBIDE AND CARBON CORPORATION

IT IS EASY TO MAKE...

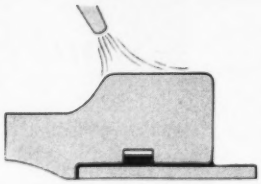


On an installation of Walseal valves and fittings just completed, in which there were over 10,500 Walseal joints, when test was applied only seven leaks developed and to make these tight all that was necessary was to apply additional heat.

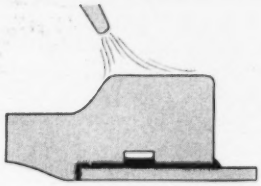
...A PERFECT WALSEAL JOINT



• A ring of Sil-Fos brazing alloy (melting point 1300° F.) of the proper quantity is incorporated in each Walseal Bronze Fitting and Valve.



• The heat of an oxy-acetylene torch applied according to instructions causes the Sil-Fos to flow, completely filling the space between the Walseal fitting and the pipe.



• Sil-Fos impregnates both pipe and fitting making a "one-piece pipe line." The safest and fastest way of making a tight, non-ferrous joint.

First the end of the pipe is cleaned and slightly fluxed. Then the end is slipped into the fitting . . . an oxy-acetylene flame is applied, and when the silver Walseal ring appears you have visible evidence that a perfect joint has been made.

There is no chance of using the wrong brazing alloy with Walseal. Exactly the right amount of "Sil-Fos" brazing alloy is built into every fitting. There is no possibility of having excess alloy plugging the line. The finished Walseal joint — brass or copper — is stronger than the pipe itself. It is proof against vibration, corrosion and creep. It cannot pull apart under any temperature to which brass or copper pipe can safely be raised.

The Walseal Fittings, Flanges and Valves are made for iron-pipe-size brass pipe and extra heavy brass pipe. Walseals can also be used for I.P.S. O.D. thin wall copper tubing (no adapters necessary). They are available in sizes ¼-inch to 8-inch fittings; flanges 1½-inch to 12-inch.

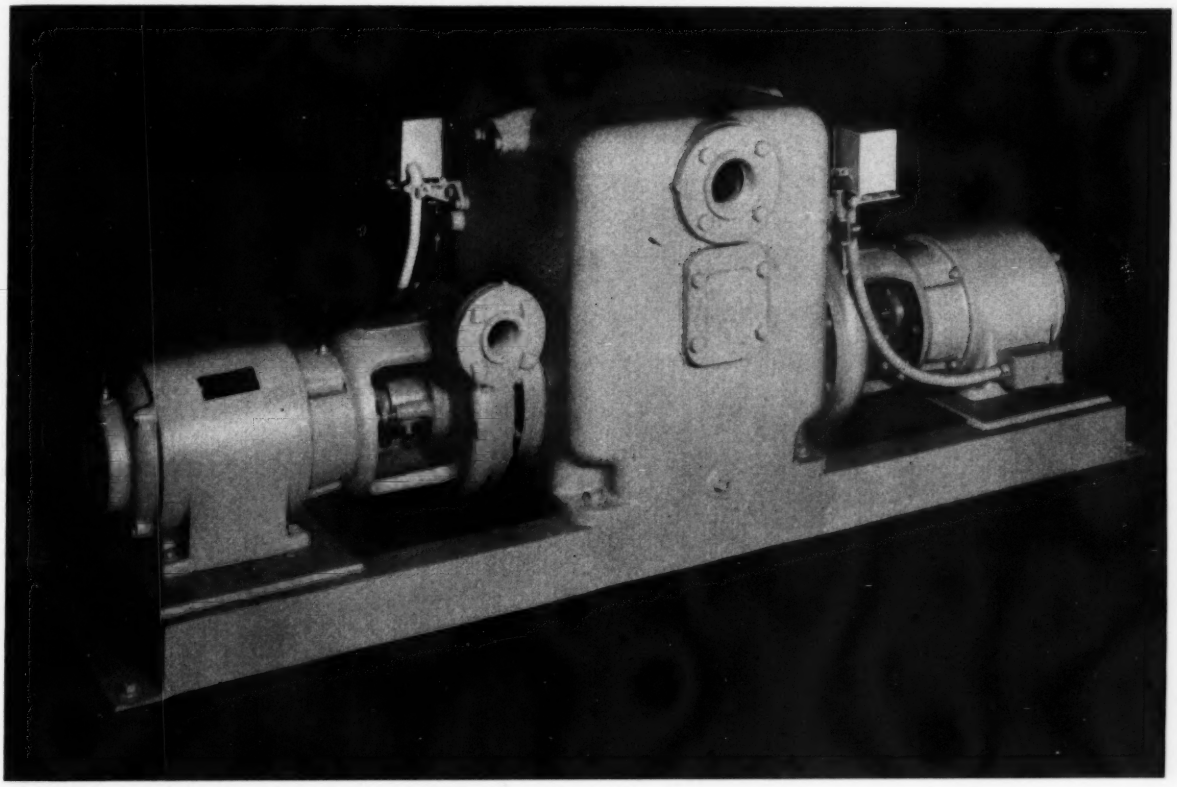
WALWORTH

VALVES FITTINGS and TOOLS
Backed by 93 Years' Service

WALWORTH COMPANY
60 EAST 42nd STREET, NEW YORK

DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE WORLD

MAXIMUM EFFICIENCY FOR STEAM HEATING SYSTEMS ON HEATING, DRYING AND PROCESS WORK.



JENNINGS CONDENSATION PUMPS

Designed for steam systems on heating, drying, or process work, these pumps offer the most reliable and efficient means of returning hot condensate to boiler or hot well. In many cases these pumps will save costly installation of boilers in a pit to provide gravity flow of returns from basement radiators and heating devices.

The Jennings Condensation Pumps are sturdy and compact in construction, and combine receiving tank, pump and driving motor in a single assembly. Pumps are bronze fitted throughout, with tobin bronze shaft. The pumping impeller is of special design, made possible by our wide experience with return line heating pumps, and is especially adapted for handling hot water with the greatest possible efficiency.

Full automatic control is furnished by means of a ball float and float switch mechanism mounted on the receiving tank. All wiring is made up at the factory, and it is necessary only to connect the pump to the system and hook up the leads. Complete information regarding these economical pumps sent promptly on request.

THE NASH ENGINEERING COMPANY

SOUTH NORWALK, CONNECTICUT, U. S. A.

FULL BLAST

The clouds are disappearing. Blotted out by belching smoke. For instance, in the Richardson & Boynton plants where everything is bustling activity as an avalanche of orders is being filled.

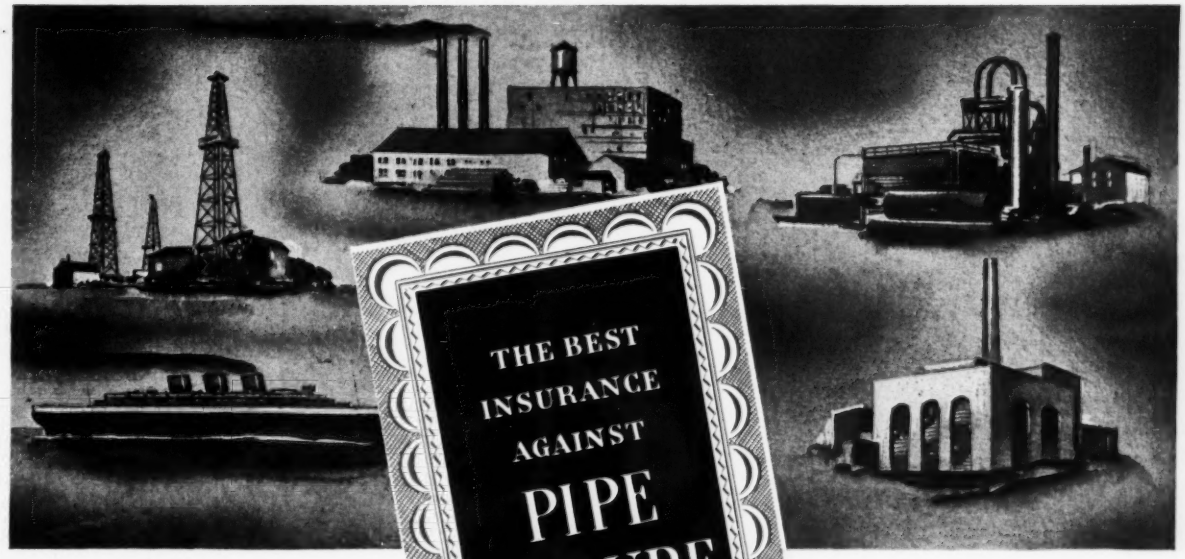
These orders come from experienced contractors, jobbers and dealers—men who know the worth of R. & B. heating units—men who know the value of R. & B. cooperation—men who know that Richardson & Boynton will back them to the limit.

During the slack years Richardson & Boynton looked ahead—not back. As a result, today finds us with plans for new improvements, innovations in heating and air-conditioning on the drafting boards. As soon as they meet the rigid tests of quality and performance in R. & B. laboratories, they will be offered to the public.

In the meantime, Richardson & Boynton are going ahead to fill the promising needs of today —full blast! !

RICHARDSON and BOYNTON Co.

244 Madison Avenue, New York City. Branch Offices in Principal Cities.



No one objects to paying 25 cents for a half-dozen razor blades, even though it is common knowledge that the steel in those blades costs in ingot form only an infinitesimal fraction of a cent. Why?

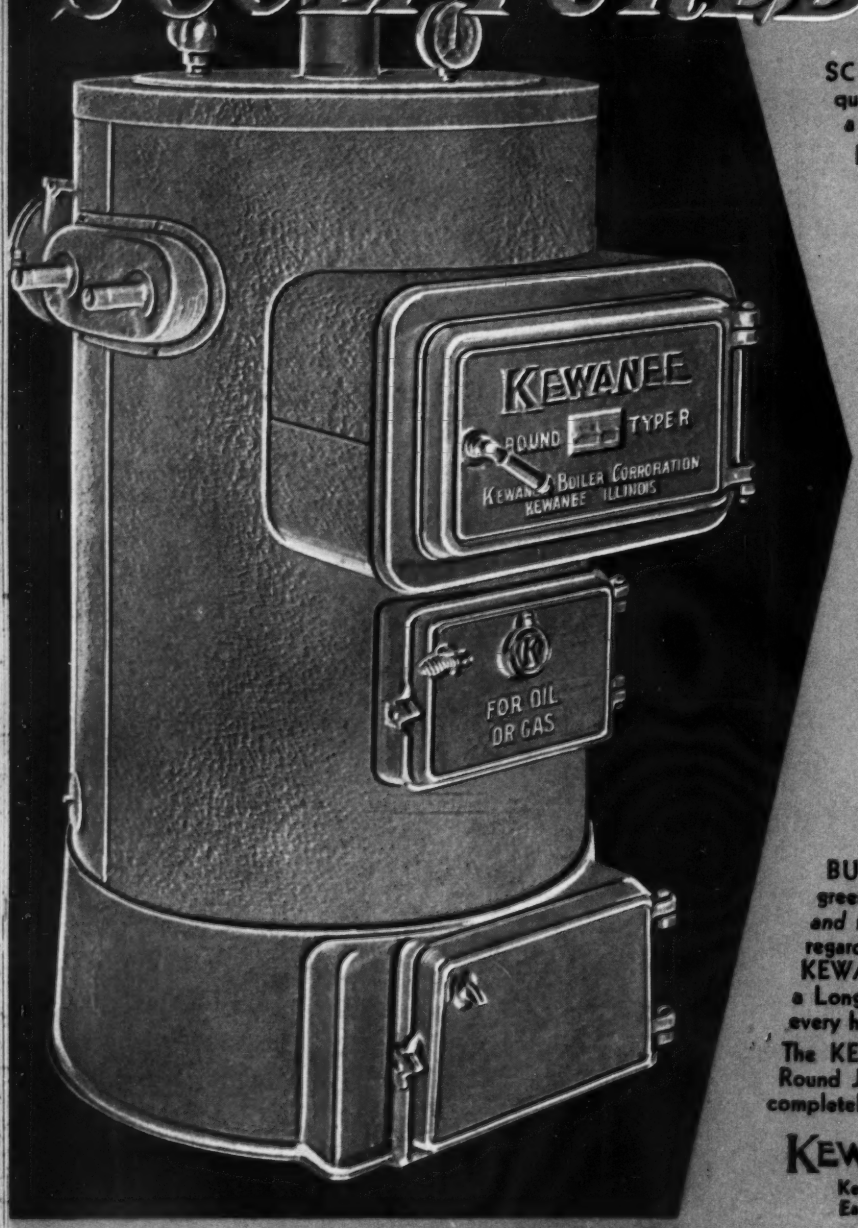
Those blades do what the steel in the ingot could not do before work was done on it. You pay for the service the steel has been processed to do.

It's the same with Toncan Iron Pipe. Open hearth iron has been alloyed with copper and molybdenum and processed to resist corrosion—and it does to a greater degree than any other ferrous material in its price class. Naturally, it costs more than ordinary pipe, but don't figure it that way. Figure the slight additional cost of the pipe itself as insurance against pipe failure. Then you will quickly realize how slight a premium you are paying for long dependable service—how little you are paying to cut down repair and replacement expense. And don't forget that it costs more to tear out failed pipe and replace it with new than it costs to make the original pipe installation. So the smart thing to do is to install Toncan Copper Molybdenum Iron Pipe in the first place and save money.

REG U.S. PAT. OFF.
TONCAN
COPPER
MOLYB-DEN-UM
IRON PIPE

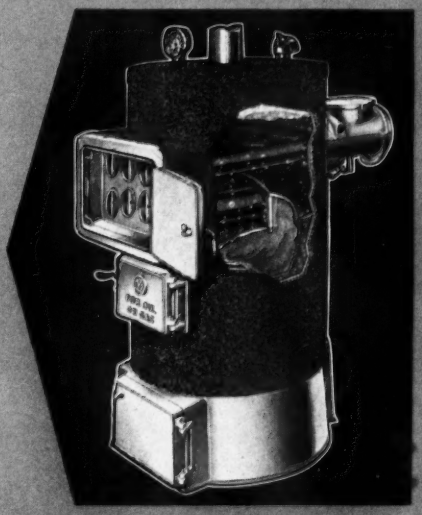
Republic Steel
CORPORATION
GENERAL OFFICES · · · YOUNGSTOWN, OHIO

ENDURING AS *SCULPTURED* MARBLE



SCULPTURED MARBLE CLASSICS usually reflect the quality of *Endurance*. Their purpose being to perpetuate a beautiful subject.

In like manner the KEWANEE Round Boiler pictured in "3 dimension perspective"—by this new fad of the Photographer—simulates the effect of a sculptured Classic. It's Trim Attractive Ensemble is portrayed housing a Heart of Steel as everlastingly enduring as the marble creations of the great sculptors.



BUT unlike cold marble, the KEWANEE, in its textured green jacket, is not only beautifully clean-cut but warm *and friendly* . . . a "Healthy Heart for every Home." And regardless of the fuel used—coal or oil, or gas—there is a KEWANEE correctly designed, proportioned and built for a Long Life of dependable heating and hot water service in every home at minimum cost.

The KEWANEE Round Type "R" may be had unjacketed; Round Jacketed; or encased in a Square or Regal Jacket to completely enclose it with the burner of your own selection.

KEWANEE BOILER CORPORATION

Kewanee, Illinois. (Branches in Sixty-one Principal Cities)
Eastern District Office: 37 W. 39th St., New York City

KEWANEE

ROUND "R" **STEEL BOILERS**

For Heating Homes with OIL

This simple test shows the 100% Solder Bond obtained with Anaconda Fittings

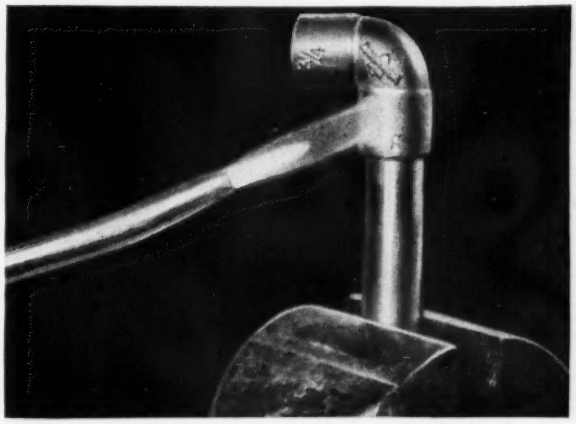
The simple demonstration illustrated shows that the solder bond between Anaconda Fittings and the copper tube is complete—making *strong,* leak-proof joints.

Experienced contractors give us six other reasons why they like to use Anaconda Solder Fittings. Here they are . . .

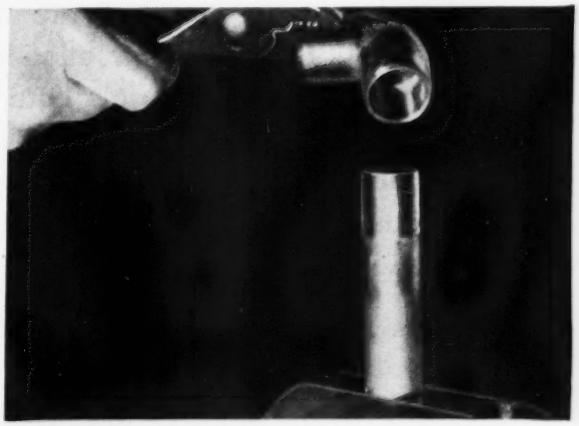
1. *Easy to install.* Save time and money . . . do not require special layout because of fittings. Solder may be introduced at *any* point along the edge of an Anaconda fitting.
2. Smooth inside surfaces permit quick, thorough cleaning . . . essential to satisfactory soldering.
3. High shoulders for the tubes to butt against . . . maximum area for solder bond at end of tube . . . strong joints.
4. Tested to 90 lbs. air pressure under water . . . the equivalent of 400 to 450 lbs. water pressure.
5. Precision made to close tolerances . . . (double-checked with "Go and No-Go" gauges).
6. Made with long cups which provide longer and stronger bonds . . . more support for the tubes.

Anaconda Fittings are available in both wrought copper and cast bronze, whichever you prefer. Anaconda Deoxidized Copper Tubes . . . furnished both hard and soft . . . are made to the accurate, standardized dimensions so essential for sound, leak-proof joints. For the highest quality threaded S. P. S. assembly, Anaconda "85" Red-Brass Pipe is recommended.

3527



To a completed joint, apply heat enough to melt the solder.



Remove the fitting and note how completely the solder covers the tube and fitting.

ANACONDA
from mine to consumer

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities

ANACONDA COPPER & BRASS

..on to Chicago

..on to Prosperity

New International Amphitheatre, Chicago, world capital for heating, ventilating and air conditioning men during the

EVERY other year brings this opportunity to advance the welfare of all whose interests are affected by the latest developments in the design, production, sale, installation, use and maintenance of materials, equipment, instruments, tools and supplies for heating, cooling, humidification, dehumidification, cleaning and moving of indoor air for domestic, business, industrial or public use to promote health, comfort and efficiency.

Comprehensive exhibits by leading manufacturers of inestimable value to every forward-moving man and organization in the profession, trade and industry.

Come . Examine . Compare . Discuss . Assimilate

FOURTH
INTERNATIONAL HEATING & VENTILATING EXPOSITION
NEW INTERNATIONAL AMPHITHEATRE
CHICAGO-ILL.
January 27-31-1936

Under the auspices of the American Society of Heating & Ventilating Engineers.

Management, International Exposition Co.

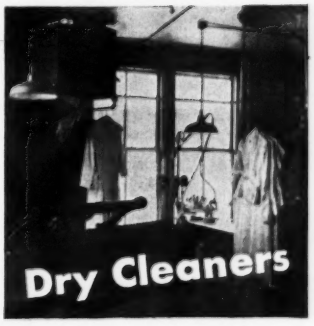
THE AIR CONDITIONING EXPOSITION

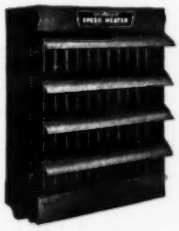
FOURTH INTERNATIONAL HEATING & VENTILATING EXPOSITION

5453

Land these jobs

WITH Sturtevant SPEED HEATERS





Quick facts about Speed Heaters

1. Quick, easy installation. Supply and return connections on both sides of heater. Handy strap hangers supplied.
2. Leakproof. Guaranteed for 200-lbs. steam pressure.
3. Provide maximum headroom. Slap them right up against ceiling if desired.
4. Quick shipment. Most popular voltages stocked in many locations.

YOU CAN SAVE in equipment cost, in installation time, and in labor on most commercial and industrial heating jobs...by putting in Speed Heaters instead of cast iron radiators or pipe coils.

And you can offer your customers the inducement of reduced cost, better heating, and a saving in fuel.

A single Sturtevant Speed Heater equals from ½ to 5 tons of cast iron or pipe coil radiation!

Speed Heaters offer you a real opportunity to meet and beat competition . . . to make money. You can get all the facts about them . . . quickly. Just phone or write our distributor . . . Crane Co. . . . or our nearby branch office.

B. F. STURTEVANT COMPANY HYDE PARK, BOSTON, MASS.
400 N. MICHIGAN AVE., CHICAGO, ILL. 681 MARKET ST., SAN FRANCISCO, CAL.
420 LEXINGTON AVE., NEW YORK, N. Y.
Sales Offices in 33 Cities. B. F. Sturtevant Co. of Canada—Galt, Toronto, Montreal

STURTEVANT SPEED HEATERS ARE DISTRIBUTED BY CRANE CO.

NO CHAIN IS STRONGER THAN ITS WEAKEST LINK

THAT TOO IS TRUE OF MANY ADJUSTABLE PORT AIR VALVES

If Nyavco was made in the usual way with a sealed float, then the great accuracy of adjustment now obtainable through its metered orifice control would be a futile effort.

FOR NOTHING IS STRONGER THAN ITS WEAKEST PART

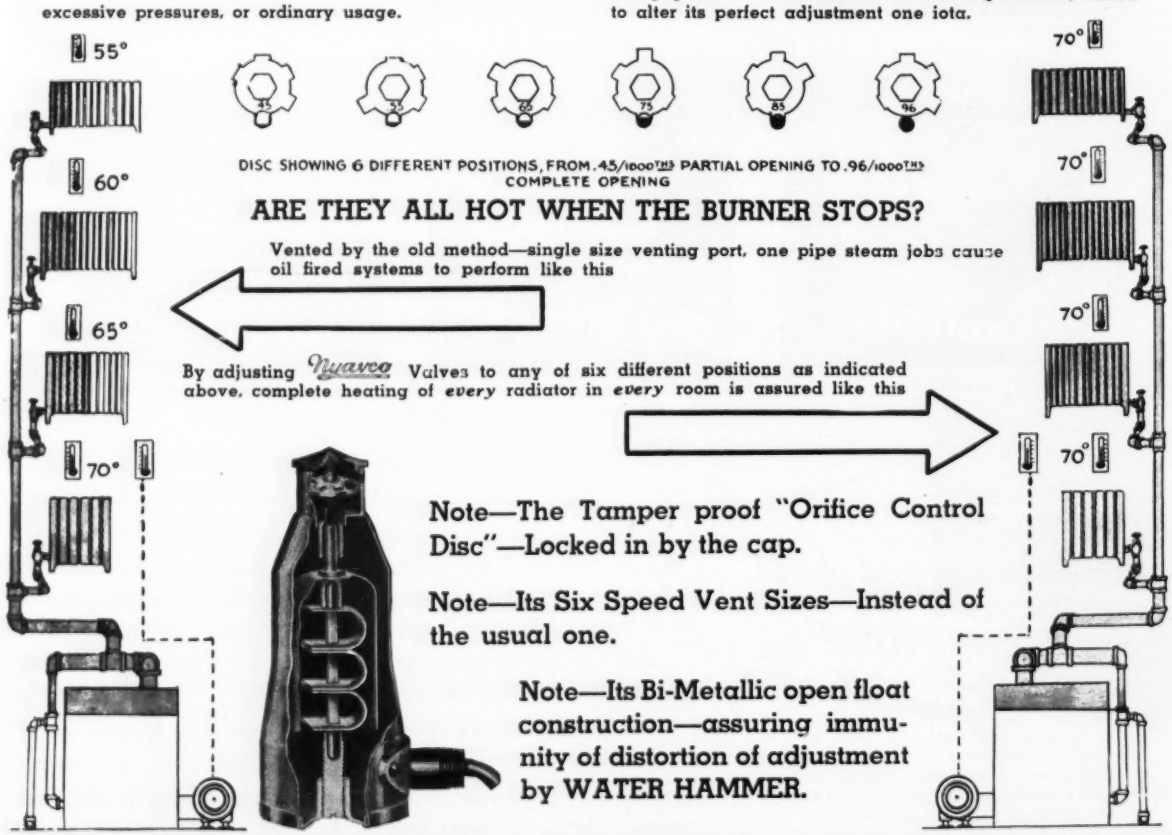
But Nyavco is made with an opening and closing member that is indestructible, either from WATER HAMMER, excessive pressures, or ordinary usage.

IT HAS NO SEALED FLOAT

WATER HAMMER testing apparatus used experimentally in our plant, on actual tests, against time, has demonstrated that WATER HAMMER as a destructive agent quickly ruins perfect factory adjustment (the primary venting action) and often collapses the member itself.

Nyavco HAS NO SEALED FLOAT TO DESTROY

Tests of eight hours continuous pounding, of Nyavco mechanism on the same apparatus, (equivalent to as many years of this condition in ordinary service) failed to alter its perfect adjustment one iota.


55°
60°
65°
70°
70°
70°
70°
70°
DISC SHOWING 6 DIFFERENT POSITIONS, FROM .45/1000TH PARTIAL OPENING TO .96/1000TH COMPLETE OPENING
ARE THEY ALL HOT WHEN THE BURNER STOPS?
Vented by the old method—single size venting port, one pipe steam jobs cause oil fired systems to perform like this
By adjusting Nyavco Valves to any of six different positions as indicated above, complete heating of every radiator in every room is assured like this
Note—The Tamper proof "Orifice Control Disc"—Locked in by the cap.
Note—Its Six Speed Vent Sizes—Instead of the usual one.
Note—Its Bi-Metallic open float construction—assuring immunity of distortion of adjustment by WATER HAMMER.

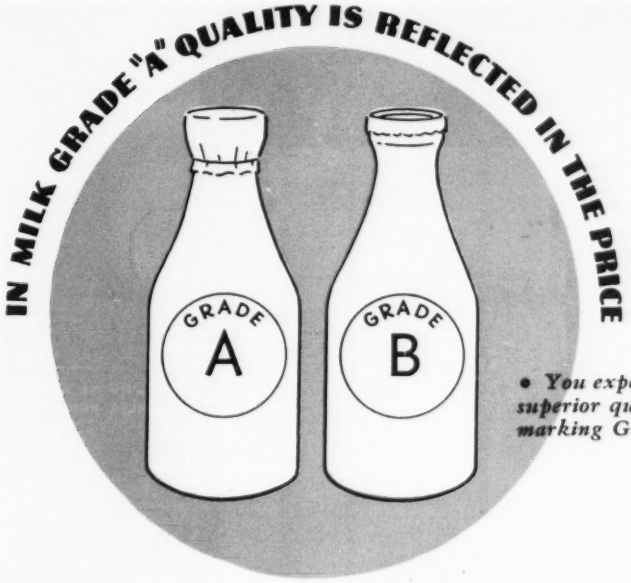
NEW YORK AIR VALVE CORPORATION

611-621 Broadway, New York City

Gentlemen: Please send us special introductory offer and Nyavco literature.

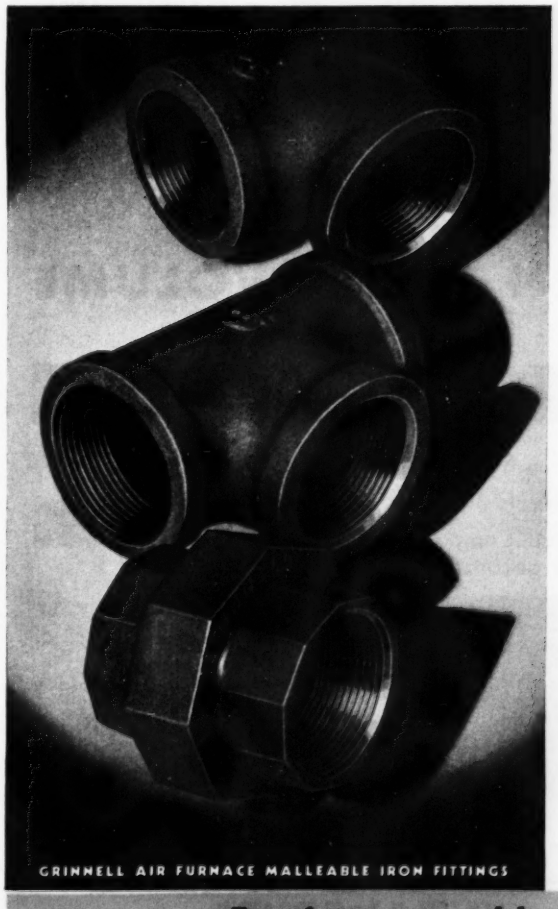
Name ..... Address ..... State .....

D.E.-12-35



• *You expect to pay more for the superior quality indicated by the marking Grade "A"*

GRADE "A" QUALITY AT NO PREMIUM


GRINNELL AIR FURNACE MALLEABLE IRON FITTINGS

When you select Grinnell Air Furnace Malleable Iron Fittings

The superiority of Grinnell *Air Furnace* Malleable Iron is the result of the use of only the finest raw materials, the superior *Air Furnace* process which produces a much finer quality of malleable iron, rigid control of every manufacturing process and threefold inspection.

Yet they cost no more than other Malleable Iron Fittings

Proper chamfers and sharp, accurate threads assure easy starting and rapid erection of piping. The *Air Furnace* process eliminates the possibility of sand holes which cause wall leaks. Smooth cores allow free flow. These features protect you against piping troubles.

Yet they cost no more than other Malleable Iron Fittings

GRINNELL COMPANY INC.
EXECUTIVE OFFICES PROVIDENCE, R. I.
Branch Offices in Principal Cities

For faster, trouble-free installation, select
GRINNELL AIR FURNACE MALLEABLE IRON FITTINGS

LIST PRICE $13.50

AVAILABLE . . . A Quick Hook-Up Attachment which permits the use of Water Gauge tappings for Boiler Connections.

A LOW WATER CONTROL . .

THAT YOU CAN SELL IN LARGE VOLUME

"Genuine Detroit" Boiler Protector No. 545

Protects Boiler against the Hazard of Low Water.

Protects Boiler against the Hazard of High Pressure.

Neither Boiler Protector nor Fuel Supply affected by Boiler Surge.

Boiler Scale or sediment in no way lessens the Protection.

No floats, levers, plungers or other moving parts to stick or bind.

Warns the user if leaks develop in his heating system.

Controls the Main Current supply at line voltage.

Small, Compact and Neat—may be placed inside the decorative jacket of modern boilers.

PRICED FOR VOLUME SALES and ATTRACTIVE PROFITS

Easily, quickly and cheaply installed.

Nothing to wear out or replace except the fusible link.

Write for Bulletin No. 79.

DETROIT LUBRICATOR COMPANY

DETROIT, MICHIGAN, U. S. A. NEW YORK, N. Y.—40 West 40th St.

CHICAGO, ILL.—816 S. Michigan Ave. • LOS ANGELES, CALIF.—3251 Wilshire Blvd.

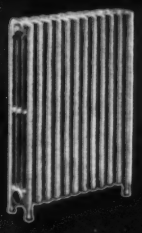
Canadian Representative—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

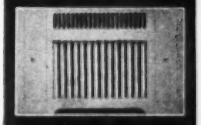
Burnham Cosy Comfort Heat

Burnham-Taco Tank for hot water supply

Burnham Square Jacketed Boiler.



Burnham Slenderized Radiator.



Burnham front for recessed radiators.

Burnham Bellows Vacuum Valve.

Burnham Radiator Control Valve.

Burnham Flexible Header Connector.

Burnham Klixon Thermostat.

Scrambled Eggs and Cosy Comfort Heat

SCRAMBLED EGGS—You would certainly give us the ha-ha, if we were in the egg business, and tried to tell you, that the best way to have good scrambled eggs, was to be sure and use only the whites and yolks from the same eggs. Some things just naturally scramble any way you scramble them. Eggs are one of them.

RADIOS—But take radios for instance. Remember how the loud speakers used to be separate? You would buy one make of radio and another make of speaker. Sometimes they worked. Sometimes they acted funny. The reason was plain enough. They just were not built for each other. Were out of balance. Now that both speakers and radios are built-in as one unit, they are balanced, and pretty much any set is good.

COSY COMFORT HEAT—Now by the same token, let's take a heating system. Of course, you can use one of our boilers for instance, and then get radiators of some other make, and valves of another, and vents of another and so on. But when you get through you may have a perfectly good scrambled egg. Or it may be a radio set out of balance.

If, on the other hand, your entire system were made up of Burnham products, built and balanced for each other, doesn't it look like just common sense, you would get better results?

That then is what Burnham Cosy Comfort Heat is. A group of balanced products, **built to work together.** Around the border is shown one of our complete Cosy Comfort Heat Equipments. Eight items in all.

Not only will you have a perfectly balanced equipment, but one from the one concern, having full responsibility for the complete outfit. One shipment. One concern insuring you satisfaction. Furthermore, buying that way saves you money. We can prove it.

Burnham Boiler Corporation

IRVINGTON, NEW YORK

Representatives in all Principal Cities of the United States and Canada

Penberthy Hot Water Heating Specialties

HIGHEST QUALITY OF DESIGN MATERIALS AND WORKMANSHIP

WATER CIRCULATOR

Modernizes old hot water heating plants, also makes hot water preferable to steam for new systems. Important advantages are (1) immediate heat, (2) reduced fuel cost, (3) uniform heat distribution throughout system, etc.

Condenser start condenser run type motor is especially designed for quiet operation and freedom from radio interference. All moving parts are sound insulated from circulator body. Self-adjusting packing requires no attention. Double inlet balanced type impeller offers no resistance to gravity flow. Impeller shaft is Monel Metal. Made in 3 sizes for 1½", 2" and 3" pipe connections.

PRESSURE & RELIEF CONTROL

Automatically keeps system filled with water and relieves any excess pressure. Complies with A.S.M.E. Code and has lever for testing relief valve. Both valves have large laminated nickel silver diaphragms that are very sensitive and positive in action. Special composition discs provide perfect seating. Springs are carefully calibrated and have exceptionally high fatigue resistance; spring below seat makes reducing valve more sensitive at lower pressure differentials. Large Monel strainers protect seats of both valves.

REDUCING VALVE

Automatically reduces available water pressure and maintains desired working pressure regardless of fluctuations in supply line. Complies with A.S.M.E. Code. Laminated nickel silver diaphragm is resistant to heat and corrosion. Large Monel removable strainer protects seat. Springs are carefully calibrated and have high fatigue resistance; spring below seat makes valve more sensitive at low pressure differential. Made in 7 models having ½", ¾" and 1" pipe connections.

RELIEF VALVE

Excess pressure in system is automatically relieved. Complies with A.S.M.E. Code and has lever for testing. Laminated nickel silver diaphragm and carefully calibrated spring assure maximum efficiency. Large Monel strainer protects valve seat against injury. Both types made for ½" and ¾" pipe connections.

PENBERTHY INJECTOR CO.

Mfrs. of Quality Products Since 1886

DETROIT, MICH. • WINDSOR, ONT.

LEADING DISTRIBUTORS STOCK THESE SPECIALTIES

CONSTRUCTED OF HIGH GRADE STEAM BRONZE

Thanks:
"In these days of rapidly changing conditions it is most helpful to find condensed under one cover the salient facts of an industry."
W. J. B.
Illinois

BETWEEN OURSELVES

Reinspection News Breaks

The long-awaited news telling us that President Roosevelt finally put his official seal of approval on the proposed survey of plumbing in federal buildings in New York and Detroit, has broken. A complete story regarding this appears on page 49. The outstanding importance of this action, to our industry, is the congressional and executive recognition of the positive relation which exists between plumbing and public health. The survey is to be caried on under the supervision of the Public Health Service. Insomuch as the government is setting the example in numerous ways, it is only natural to expect that this movement will grow and extend to include the reinspection of federal buildings in all cities, the reinspection of state and public structures and the reinspection of private buildings. The number of instances of cross connections which will be brought to light, of course, cannot be predicted at this time. That there will be a large number of dangerous conditions discovered goes without saying. If corrective action is taken where faulty conditions are found, an improvement in business conditions can be listed as a very likely second benefit to be obtained.

Personalized Plumbing

In our November issue, we saved what we thought was the most striking feature for the last item to be mentioned on this page. We refer to the new merchandising feature which was called "Heating Comfort." Because of the outstanding interest and response which was created by this, we have it uppermost in mind, this month. The feature is repeated in this issue under the heading of "Personalized Plumbing." This time it tells the story of the plumbing contractor and what he has to sell. The J. Brown Joneses are his prospects and the story is written for consumers so that DOMESTIC ENGINEERING readers will be able to mail reprints to their prospects and customers.

The J. Brown Joneses are developing into very interesting characters and we predict that they, together with Mr. Smith, their plumbing and heating contractor-dealer, will have a wide acquaintance before this series of articles has run its course.

Double Recognition

When the first FHA prize contest was won by a plumbing contractor in Oak Park, Illinois, he set about to capitalize on the fact that he thus had won national recognition for his accomplishments, in the community he served. He also recognized in this, news value. The result was that through his local newspaper he received a considerable amount of very favorable publicity in the issues which carried his advertising telling that he was equipped to assist home owners in the matters of financing plumbing and remodeling projects through the FHA. The fact that he had won this contest was sufficient evidence for many of his prospects, who were not acquainted with him, of his ability to take care of their requirements. Thus, all of his activities and accomplishments worked together to develop business for him. This story, as it was submitted to us in the form of an entry in the second FHA prize contest, is reproduced in this issue.

To us, one of the most significant features of this contractor's enterprise is that he recognized the value, in his business building efforts, of doing an exceptional job as compared with that of his fellow-contractors. By obtaining recognition in his own industry for the quality of his work, it was a simple matter for him to obtain recognition among his prospects.

Cooling Season Ahead

At this time of the year, the tendency is to think about keeping warm. However, it is just a matter of a few months before summer and its cooling problems will be upon us again. In order to take full advantage of the opportunities which present themselves during the various seasons, it is necessary to be prepared and ready some time in advance of the actual season. This is one of the reasons for our publishing in this issue an article which describes how electric water supply installations may be promoted and installed for operation in connection with the cooling of city, as well as rural homes. This development opens up a new field for plumbing, heating and air conditioning contractor-dealers. Heretofore, it has been considered that only the outlying and rural areas offered the big possibilities for the sale of domestic water supply equipment. With this new application, there are new and undetermined possibilities for increased business, not only in regard to the pumping and air cooling equipment itself, but in regard to accessories. For example, the water used in an air cooling instalation has served its purpose as soon as it has passed through the cooling coils. The effect on the water is only that of adding to its heat content and if it is discharged to the sewer, it represents a distinct waste. It suggests both lawn sprinkling and auxiliary domestic water supply possibilities.

Your Editor

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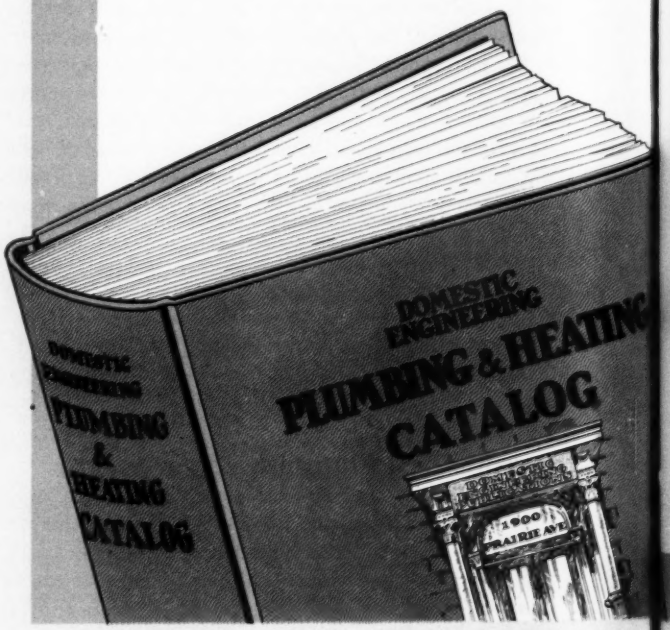

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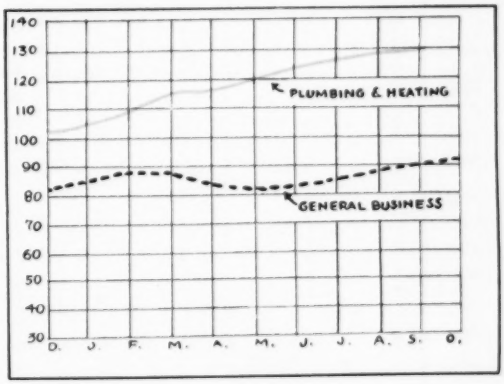
in the PLUMBING and HEATING MARKET

BECAUSE catalog material is directly coupled with buying, the manufacturers whose names appear, have consolidated their buying information in Domestic Engineering Plumbing and Heating Catalog and Mid-Year Supplement—thereby making their products easy to buy.

The composite plumbing and heating curve took a very sharp upturn as evidenced by the chart shown. Manufacturers in the Plumbing and Heating Industry are eager to assist you in participating in the increased opportunities for better business ahead.

The manufacturers who have made it possible to extend this convenient purchasing service will appreciate your patronage.

Composite Plumbing and Heating Curve, Compiled by Marketing and Research Bureau.



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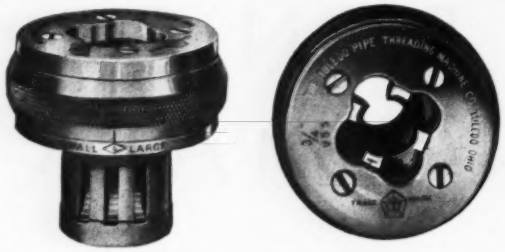

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—are easily and quickly threaded with the new "TOLEDO" Adjustable Bolt die Heads.

A twist of the wrist sets them to cut standard or an over or under adjustment of $\frac{1}{64}$".

These variations are obtained by loosening four cover screws and turning the knurled ring until the dies are set to the desired size. Settings always visible. Dies always cutting equally. Dies easily removed and reground when dull or replaced at small cost. Each head is cadmium plated.

The ideal type of bolt die. Bolt die heads you need. Order now from your dealer.

3/8", 7/16", 1/2" or 9/16" Adj. Die Head with U.S.S. or S.A.E. R. H. Bolt Dies	$3.35
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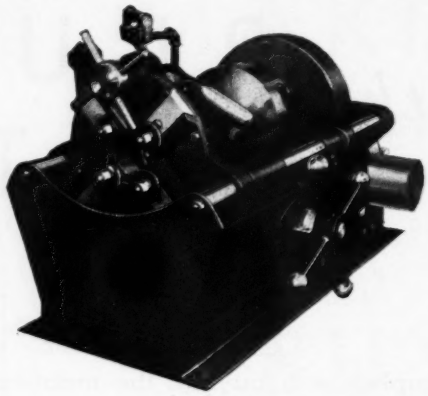

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—is cut, threaded and reamed quickly and efficiently with the "TOLEDO" No. 999 Power Pipe Machine. 2" threaded in 20 seconds; cut off in 15 seconds.

Four blade cutter head. Cone type fluted reamer fed by carriage feed wheel. Rack and pinion with thread length indicator. Positive flow oil pump. Large deep chip pan and oil reservoir. Switch guard. ½ H.P. motor that operates from any 110 volt lamp socket and adjusts speed to load. Safety friction gear protects from overload.

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No. 999 Super-Model machine with separate quick-opening die heads and adjustable pipe dies ½" to 2" inclusive..... **$350.00**

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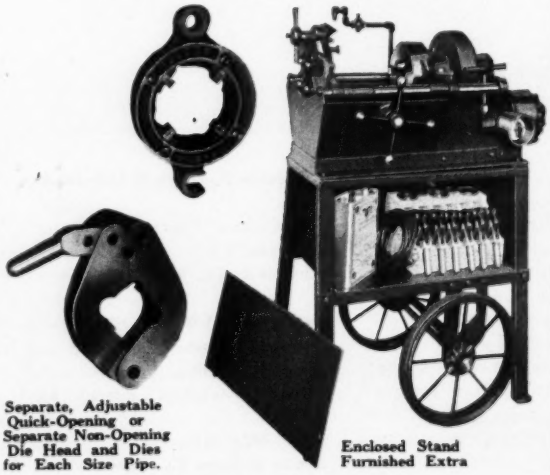

Separate, Adjustable Quick-Opening or Separate Non-Opening Die Head and Dies for Each Size Pipe.

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"TOLEDO"

SPECIFY A "TOLEDO" FOR BEST RESULTS

Our Industry

December
1935

Another Reason for United Effort

From unexpected sources there has been presented the suggestion that the manufacturer to wholesaler to plumbing and heating contractor-dealer to consumer method of distribution is a relic of horse and buggy days. To be specific, an official of the National Association of Real Estate Boards just recently spoke before the Atlantic City meeting of the Land Developers and Home Builders, a division of that association, and stated, "It will mean something to us if we can break down the distribution system in the building industry." Apparently the members of this group resent the fact that it is necessary for them to purchase plumbing and heating products through the established retail outlets of our industry. Information reaching us is to the effect that this group is not stopping merely with resentment, but that they are proceeding with negotiations to secure what they consider adequate discounts from manufacturers on all the materials used in building operations.

To those of us who know better, all of this is ridiculous. However, insomuch as such a group exists with such ill-advised ideas, working toward a disastrous result, it would be equally ridiculous for us to disregard this potential source of disturbance.

We know that the present established method of distribution in our industry has come about because of the soundness of its operation. It is sound because the various branches involved have special functions to perform and because each provides services which are necessary and which are unique to each branch. To review the idea that the functioning of the separate but related branches of our industry involves the health, comfort, convenience and protection of the public, may seem to be a needless repetition of indisputable facts. However, as proven by the action discussed in the foregoing, there still are those who either do not know these established facts or through personal motives choose to disregard them. Either they do not or will not understand that plumbing codes are not enacted in states and municipalities for the protection of the plumbing industry, but instead are for the sole purpose of regulating plumbing installations so as to avert possible danger to public health. Either they do not know or do not care to believe that heating contractor-dealers have won and maintained their place in the distributive chain through a discharge of their responsibilities for the comfort and safety of the public whom they serve.

Beyond all of this, the different branches of our industry are doing a necessary work. If it is not done by one, it must be done by another so that the net result to the consumer is the same if only cost is considered. Thus the claim that to circumvent branches of our industry would effect ultimate consumer cost reductions, is unsound.

In this changing world, we cannot lull ourselves into a false sense of security based on the mistaken idea that the general public accepts too easily our reasons for existence. Further opportunity to serve must come as a result of continual emphasis on these reasons for existence.

The official already referred to, predicted that if the builders in their group were firmly united, they would be able to dictate their own terms in regard to the direct purchasing of materials in circumventing the wholesaler and contractor-dealer groups in the building industry.

There can be but one answer, and that is a united effort on the part of our industry to defeat this unsound and unwarranted attack. The first step of individuals in our industry to take, is to identify themselves in a positive manner with the groups already functioning to combat these outside influences. Those who already are not members of their respective associations, will be able to make their efforts and influence most effective by becoming members. Then, on the first signs of the formation or activity of the Land

The entire DOMESTIC ENGINEERING organization unites to extend to our readers, everywhere, the very best wishes of the season

Developers and Home Builders in your locality, let them know of the presence of a well defined and closely knit force designed to maintain aggressively, the present established channels of distribution. Directive and combative efforts through the related branches and agencies in our industry, already are functioning. It merely remains for concerted energy to be placed behind these efforts.

Our Broadening Field

Insulation Can Be Big Factor in Opening New Market

Decreases in heat losses justify reductions in the size of heating plants, with consequent savings

AT the last monthly meeting of the Illinois Chapter of the American Society of Heating and Ventilating Engineers, 50 members boarded a train and traveled to Milwaukee, where they were greeted by members of the Wisconsin Chapter. A joint meeting was held that evening during which Professor G. L. Larson of the University of Wisconsin discussed insulation, weather stripping and building construction, and its relation to the size and operation of installed heating equipment. Some striking figures were presented as to the amounts by which radiation must be increased in order to compensate for poorly insulated and constructed buildings.

The meeting was thrown open to discussion. John J. Aeberly (chief of division of heating and ventilation, Chicago board of health) arose to ask why it was that home owners were not able to take advantage of good installations of insulation and better-than-average home construction, from the standpoint of a decrease in the size of their heating equipment with a consequent reduction in both first cost and operating expenses. He lent point to his inquiry by observing that he was having a home built for himself and had noted that the equipment being installed was

(Continued on Page 146)

"In this example, there is seen a new sales opportunity for heating contractor-dealers"

Roosevelt Approves Order to Reinspect Plumbing

Government sets example for states, cities, individuals. Action is big step in recognition of plumbing's influence on public health. Marks accomplishment of association

WHAT is considered to be one of the most outstanding and significant of actions affecting our industry is found in the executive order for the reinspection of the plumbing in Federal buildings in New York and Detroit. It is significant in that it establishes through congressional and executive action the close relationship between plumbing and public health. It marks the accomplishment of one phase of the national association's broad program. The formal news release from Washington, which covers this, is as follows:

President Roosevelt, on November 29, put his official seal of approval on the long deferred survey of plumbing in Federal buildings in New York and Detroit under the supervision of the Public Health Service.

RESOLUTION PASSED BY CONGRESS

Designed to locate dangers to public health that lurk in bad and defective plumbing, this survey is the direct result of the efforts of the N. A. M. P. to gain governmental recognition of the health angle of plumbing.

The survey is the outcome of a resolution passed by the last session of Congress. The resolution is as follows:

"WHEREAS since 1933 the danger of the outbreak of epidemics such as Amebic Dysentery has become a threat to public health; and

WHEREAS defective plumbing and cross-connections between sewage and water supply lines have been presumptive causes therefor; and

WHEREAS these dangers increase with the age of plumbing systems; and

WHEREAS the Government buildings throughout the United States have many of the oldest types of installation; Therefore be it

RESOLVED BY THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES OF AMERICA IN CONGRESS ASSEMBLED, that the United States Public Health Service be, and is hereby required and directed to make a complete survey of all government properties for the purpose of eliminating dangers of the type indicated in Government buildings and report to the Congress on or before January 3, 1936, the cost involved in making desired eliminations and improvements.

Section 2. The United States Public Health Service be, and is hereby directed to make a study of the relation of Amebic Dysentery to plumbing and issue a report to the Congress on or before January 3, 1937, for the benefit of the medical profession and the plumbing industry."

The Resolution was prompted by a casual survey made in the course of one hour in the Capitol Building in Washington. In this survey, thirteen (13) cross connections between water supply and sewage disposal systems were located. A hearing before the House Building and Grounds Committee led to the suggestion that since these dangers were national in scope, Congress and the public should be advised of where they were. Congressman John D. Dingell of Detroit, and Senator Royal S. Copeland of New York, were active in securing the attention of Congress.

PUBLIC HEALTH SERVICE TO HANDLE SURVEY

The Public Health Service reported that it was difficult for them to handle the national survey with their limited personnel. Consequently, it was arranged that the Public Health Service handle two projects—New York and Detroit. All other projects will be directed by local health and sanitation experts. The New York project indicates the size of the survey. There are 756 Federal buildings in New York alone, which will be subject to this project.

Pointing out the dangers of cross-connections in plumbing, the Surgeon-General of the Public Health Service said in a letter to Congressman John Dingell, under date of June 24, "Of a total of 9,367 cases of typhoid caused by waterborne outbreaks during this

(Continued on Page 116)

Slum Clearance

By Edward P. Rich

Neiler, Rich & Co.

THE three housing projects originally contemplated for Chicago were located on the north, south and west sides of the city in slum areas. Our firm was commissioned to engineer the west side development. I believe I am correct in stating that this was the largest single housing development ever contemplated. The building site constituted 147 acres, being approximately 2,500 ft. square. The proposed buildings were: three, four and five room—three and four story apartments; two story flats; and two story strip houses.

Separate buildings	150
Total number of rooms	14,700
Building cubage	32,000,000

Unfortunately, due to the inability of the Government to obtain the property at a reasonable figure, with the further possibility of long delay in acquiring the land by legal procedure, this development as originally contemplated was abandoned, and a revised, somewhat smaller project is being installed.

Fig. 1—Illustration at top of page shows model homes in Chatham Village, Pittsburgh. This is one of the better housing projects of that city

Although this construction was abandoned, the general designs proposed conform closely to the methods used for heating and steam distribution of other large housing projects and in consequence are described in this article.

To serve the large building groups, isolated boiler plants are being provided. The plants in general contain water tube boiler units equipped with mechanical stokers, a complete complement of auxiliaries including overhead bunkers, coal and ash handling equipment, deaerating feed water heaters, combustion control and a full set of recording instruments. The smaller plants are of more simple design. Portable fire box boiler units with mechanical stokers have been selected. For all plants, coal storage capacity is provided to care for one month's coal supply for peak period. Careful study is being given to plant design and mechanical construction in order to provide proper relay service, assurance of operation and economy.

For a large housing development where the building site covers a number of city blocks, it is considered impractical to transmit steam at the low pressure of 15 lb. or below, due to the excessive cost of large steam mains when compared with high pressure steam transmission at 100 lb. and above. The larger installations will be provided with a system of high pressure trunk lines

How Heating Estimates Were Figured for Project

radiating from the boiler plant to the so-called power centers. Here pressure reducing valves are to be installed.

From the power center, secondary branch mains are run to the individual building groups. These mains will operate at a pressure of 15 lb. and below, as conditions require. Motor driven combination vacuum and return pumps are installed in the power center to collect the condensate for its particular group of buildings and pump it back to the boiler plant. The power centers are located in building basements and in general each is designed to serve 50,000 sq. ft. of radiation. For the large west side project, eleven such stations were required.

HIGH STEAM VELOCITIES USED

High steam velocities are used for both primary and secondary distribution under maximum load conditions. The pipe sizes are being reduced to a minimum and most of the pressure drop between the boiler plant and the buildings is taken in the mains.

The Jane Addams Project No. 1405, which is in the process of design. is a relatively small project, having a heating demand of 46,950 sq. ft. of direct radiation. Two small low pressure plants will serve this group, each plant containing two portable firebox* low pressure boilers. The steam will be furnished by means of a low pressure vacuum system with vacuum pumps installed in each boiler plant. The boilers and pumps of the two plants are cross-connected to permit one plant being shut down in summer and during mild weather when the load is such as to justify it.

For the Chicago installations the buildings are being heated by means of two pipe vacuum systems, equipped with zone control. Radiation is to be wall hung with the exception of the bath rooms where it is proposed to use convector type radiation with metal enclosures. Separate risers are used to serve each radiator bank. A small amount of radiation will be installed in the apartment basements but no radiation is provided for spaces below the first floors of the house units. In the latter case, the first floor radiation is increased to care for a 30 deg. temperature difference between the rooms and the underfloor space.

The heat losses have been calculated using the factors established by the American Society of Heating and Ventilating Engineers. The factors used in computing the heating for the Jane Addams Project for Chicago are as follows:

Temperature difference—80 deg. Fahr.

Net wall	26.5 Btu. per sq. ft. per hr.
Glass	90.0 Btu. per sq. ft. per hr.
Roof (1½ in. insulation)	14.4 Btu. per sq. ft. per hr.
First floor slab for houses	16.2 Btu. per sq. ft. per hr.
Infiltration	70.5 Btu. per linear foot of crack

One square foot of radiation figured as giving off 240 Btu. per hour.

The radiation required to serve the Jane Addams building group was figured using the above heating factors and establish the basis of the following unit factors:

(Continued on Page 148)

*Since writing this article additional property has been obtained and a central plant will be designed to serve the project.

Fig. 2—View at right shows some of the old tenements in New York City which have been removed to make room for Knickerbocker Village, a big development which has been designed to provide moderate priced apartments

This month's feature describes another of the interesting experiences of the J. Brown Joneses

Readers Respond to New Aids

Which Tell Consumer Story

"Personalized Plumbing" contains this month's story regarding the experiences of the J. Brown Joneses. Last month it was "Heating Comfort and What the J. Brown Joneses Learned Regarding It." From present indications, all of us are going to become very well acquainted with these interesting people. Especially will this be so in the case of customers of our readers, judging from requests for reprints.

One reader in Mississippi writes to say, "We will be glad to have about one hundred copies of this reprint for distribution among our best heating prospects." Another reader tells us, "We can use fifty reprints of your mailing piece 'Heating Comfort.' You can be sure that they will be appreciated."

Davenport, Iowa, contains another aggressive merchandiser who has written, "We can use one hundred to five hundred and assure you that any amount you might send will not go to waste." A Louisville, Ky., contractor states, "The feature makes a very attractive mailing piece. We could use a hundred of these 'Heating Comfort' reprints to good advantage."

Still another contractor, prominent in Green Bay, Wis., states, "The story told in the November issue ought to be read widely by one's clients. One of my neighbors purchased a stoker from a local firm who opened a store here about a year ago, specializing in mechanical equipment for the home. He admitted to me recently that he should have given more consideration to the dependability of the dealers. They are out of business now and those who purchased from them must look elsewhere for service.

"Your reprint would help to solve this problem."

This gives an indication as to the reaction of readers to the new feature introduced in the last issue of Domestic Engineering. We were not surprised at this because it was developed in response to numerous requests from readers for sales helps which would tell the contractor-dealer's story.

This month's feature tells the story of the plumbing contractor-dealer. It has been written with the idea of attracting the attention of the consumer. At the same time, there has been a definite attempt to tell the story of good plumbing, what it means in the home and the necessity for home-owners engaging services of established and responsible contractor-dealers.

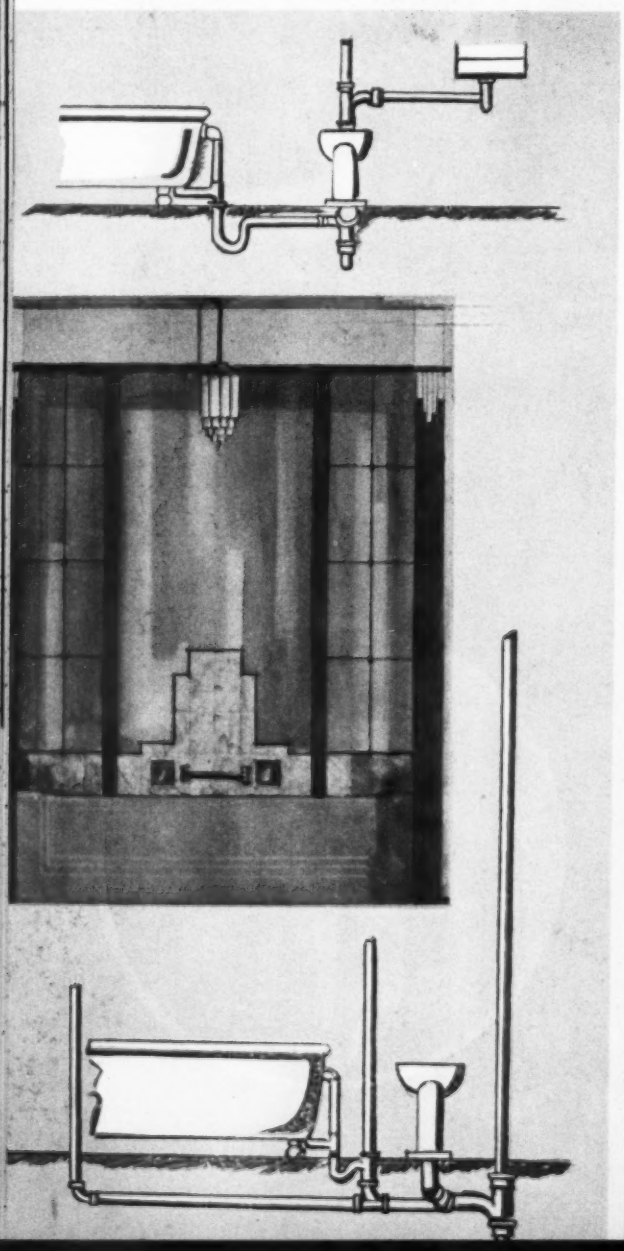
Reprints of the following four pages are available through Domestic Engineering to readers for mailing and distribution among their selected customers and prospects. Write to the Merchandising Editor, Domestic Engineering, 1900 Prairie Ave., Chicago.

PERSONALIZED PLUMBING

What the J. Brown Joneses found it to mean, when they entertained over-night guests

Personalized Plumbing

What the J. Brown to mean, when they night guests



MR. and Mrs. J. Brown Jones just recently had their home redecorated and had many of their furnishings renewed. They live in what formerly was an old fashioned house but it has been changed and remodeled so many times, it has very little of the original appearance. Friends describe it as being decidedly homey and say that in the twenty or more years the Joneses have lived there, it has taken on, and now reflects, their character. Really, it reflects Mrs. Jones' ideas. She is quite prominent in outside activities and between her club work and social affairs, she is brought in contact with most of the latest ideas in making the home attractive. Then too, the youngsters are growing up and they have injected their thoughts into changing the appearance of the home.

All of this was uppermost in Mr. Smith's mind when he called in response to a request from Mrs. Jones. Smith had taken over the plumbing business which his father had established when he and Mrs. Jones were youngsters in school. Because of knowing Mrs. Jones, he was prepared for her enthusiastic descriptions of how she wanted her new bathroom to appear.

"I want a bathroom that is fully as good looking as these pictures you see whenever you open a magazine," said Mrs. Jones at the outset of the conversation. Scattered about were a number of current woman's magazines opened to pages showing furnishings for homes. Also in the background was Mr. Jones with his after dinner cigar. His wife then went on to explain that although she had tried to do something with the bathroom when they had the house refurnished, it just did not seem to make much difference with the final effect and it certainly was not in keeping with the rest of the home.

In response to this, Mr. Smith asked how many cars they had bought in the last ten years. This seemed to be aside from the point but Mrs. Jones answered, to which Mr. Smith replied, "There is just the point. During the last ten years you have changed your car an average of once every three years but today you have

"I want a bathroom that is fully as good looking as the pictures you see whenever you open a magazine"

Joneses found it entertained over-

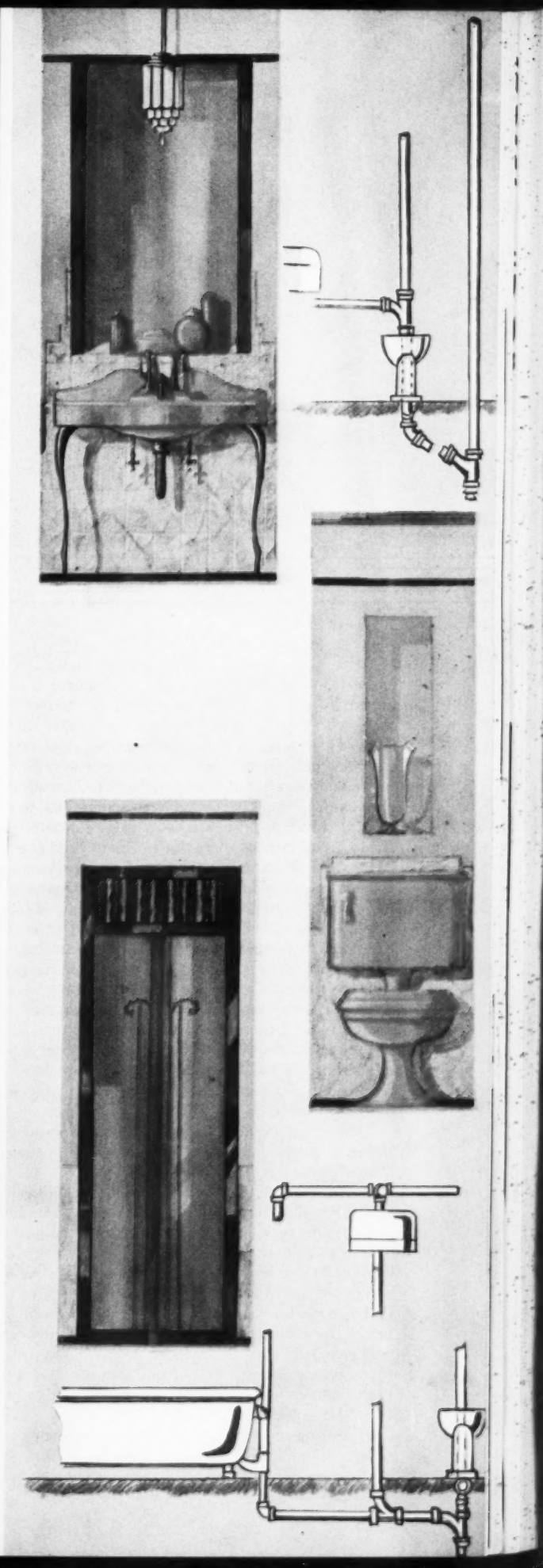
the same plumbing fixtures that came with this house. Styles and colors in bathrooms have changed just as radically in regard to plumbing fixtures as in the case of automobiles. It is just as impossible to make old bathroom fixtures fit into a modern home setting as it is to make a 1920 automobile look like a modern streamlined car by giving it a new coat of paint."

At this point, Mr. Smith drew from his case a group of photographs which showed remodeled bathrooms he had installed just recently for some of his customers. Among these were special drawings which he had made in planning some of his more elaborate jobs.

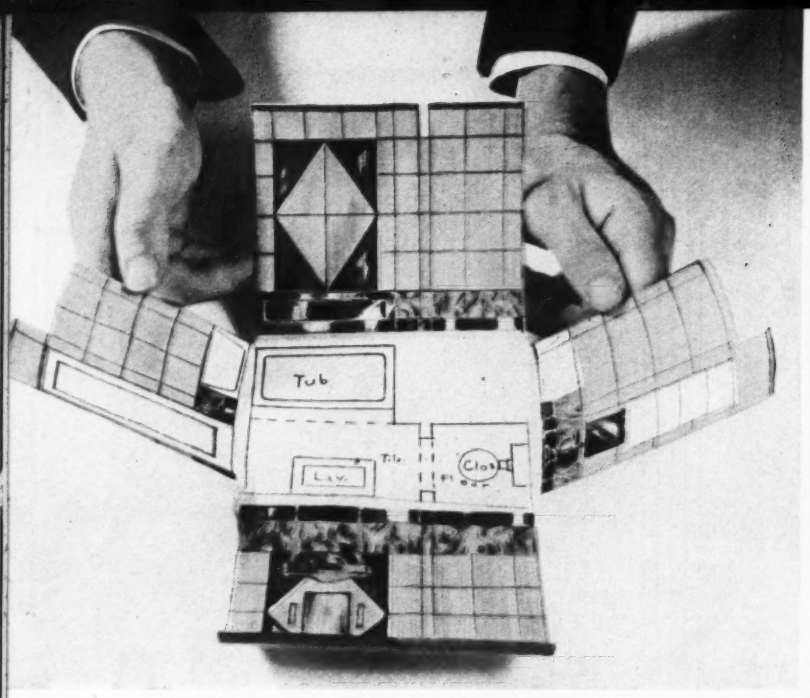
"That's what I have in mind," said Mrs. Jones, pointing to one finished bathroom. "Those drapes and the shower curtains are exactly the same as the one I bought for our bathroom, but the effect is altogether different. I can see it now, I never would be able to make our bathroom look the way I want it as long as we have our old fashioned fixtures."

Up to this point, Mr. Jones had said nothing but when taking out the old plumbing was mentioned he began to show a decided interest. Turning to his wife he said, "If you are going to tear up the bathroom, I want Smith to put in a separate shower for me, if it can be done without rebuilding the house." Smith was waiting for this remark. He had played golf with Jones on numerous occasions and often had noticed the huge amount of satisfaction he had received from the showers at the club. "You jumped the gun on me that time, Mr. Jones," said Smith. "Making changes in the arrangement of plumbing fixtures and accomodating new ones is a part of modern plumbing practice. Also, it is our policy to make changes with as little effect on other parts of the house as possible. The object is to confine all of the remodeling and up-set to the one room being remodeled. As a matter of fact, on many of our jobs we even bring the bath tub in through the window so as to avoid causing any disturbance in other parts of the home."

Jones was all attention by now. Even though he did not take much interest in fixing things around the house,



"Among these were special, colored drawings which he had made in planning some of his more elaborate installations"



"Smith sketched the floor plan of the bathroom to scale. Then they cut out fixtures and placed them where they looked best"

as Mrs. Jones was ready to testify, he had a healthy interest in mechanical things. Therefore, Smith continued by saying, "You recognize, of course, that any changes to your plumbing system are regulated by health laws. These laws have been enacted so as to protect you and all others from disease and dangers which can very easily and readily reach you through incorrectly installed plumbing. I refer particularly to piping and to connecting the beautiful fixtures I know Mrs. Jones has in mind. Aside from health, there is the matter of convenience. After your bathroom is perfect from the standpoint of appearance, it would be a keen disappointment if you found that because of old or incorrectly sized piping you could not get a full flow of water to and from your fixtures. Also there is the matter of protecting you and your family from scalding or the overheating of your water, through the proper installation of protective devices. All of these things will be taken care of automatically by us. I merely want to point out that our ability to handle these hidden features results from the experience, training and information sources we have open to us through our established connections in the plumbing industry."

This was information which Mr. Jones wanted to hear. Being a business man he understood it thoroughly and asked Smith for more details.

"I don't want to talk a lot of technicalities," Smith said, "but there are some things about a plumbing system that every home owner ought to know and appreciate. I believe you called me because you know that I have a license from the city to practice plumbing. I'm convinced that if more people knew why I have to secure that license, and renew it each year, it would be better for all concerned. Besides, I'm proud of my license. I will give you, very briefly, one or two points that are of more importance to you, from the standpoint of your health and comfort, than the beauty of the plumbing fixtures Mrs. Jones has in mind.

"First, there's venting. You know, of course, that the waste water from your fixtures runs into the sewer. And you know, too, that you couldn't have merely a straight run of pipe down to the sewer or you would have a lot of pretty awful smells coming into the house. What keeps them out? Here is the answer—that trap; that U-shaped piece of plated piping there—it's plated because it's in the open and must look well. The bend is always filled with water, and, of course, the odors can't get back through that water. But there's a trick to keeping that water there. And that's where venting comes in. You have seen the short length of pipe sticking up above the roof, haven't you? That and the piping to which it is attached equalizes the air pressure in the system so there is no chance that the water in the trap will be blown or sucked out and so leave the waste line to the sewer, open to odors.

"That completes my lecture on the mechanics of plumbing. I won't touch on the annoyance of water-hammer, and that sort of thing. I've got a reputation, handed down to me by my father, and the annoyances that unskilled installations can cause just aren't in the picture here."

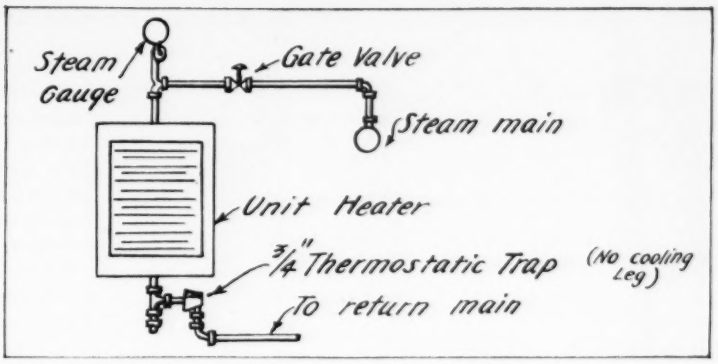
The actual selection of the fixtures had been completed and then came what was, for Mrs. Brown Jones, a fascinating task; the placing of the fixtures. Smith sketched the floor plan of the bathroom to scale, they cut out the fixtures, and Mrs. Jones began to push them around, now here, now there. In the end they found it possible to make several arrangements.

After she had made each arrangement, Mrs. Jones asked, very seriously: "Now, with the fixtures that way, can you do your venting and not have those kind of connections you said were dangerous?"

To which Smith, with equal seriousness, replied: "Yes; you select the arrangement. We'll take care of the rest of it," so that Mrs. Jones was able, at last, to lean back with a sigh of content.

The installation was completed and shortly afterwards, Smith called on the Joneses to check up on everything to see that it was giving complete satisfaction. After the formalities, Mrs. Jones said she thought she could express her satisfaction best by repeating what Mrs. Blank had said. The Blanks had spent the night at the Joneses and Mrs. Jones unintentionally overheard Mrs. Blank tell her husband that when she stepped into the bathroom, "It was like stepping into a picture in a magazine, and what is more, it actually reflected the good taste and personality of Mrs. Jones just as if she had a part in the planning of it." "And, I don't think I shall ever tell her how we did work together to get the final arrangement and other features," said Mrs. Jones.

Earl Brown tells of a problem he met involving a new unit heater installation wherein, alternately



It Blows Hot and Cold

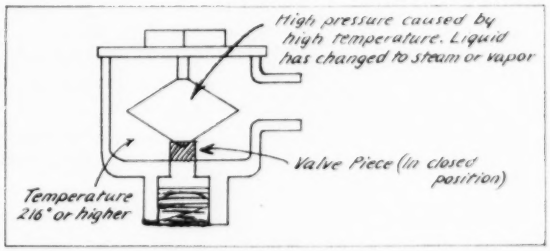

High pressure caused by high temperature. Liquid has changed to steam or vapor
Valve Piece (in closed position)
Temperature 216° or higher

Fig. 2—Cross sectional view of the thermostatic trap at a temperature of 216 deg. Fahr. or higher. With trap closed, water piles up in the heater, causing it to blow cold air

SEVERAL months ago the writer received this letter from Daniel Cook who is a heating contractor in Goodland, Ohio:

Gentlemen:

The unit heaters we installed in the Goodland Paper Co. plant are not working properly. Sometimes they blow hot air, and at times the air is cold. Please advise me on this matter so that we can correct the trouble.

Sincerely yours,

Daniel Cook.

We thought this was a clear case of fluctuating steam pressure, so we replied as indicated in the following:

Dear Mr. Cook:

We have received your letter with reference to unit heaters which you installed in the Goodland Paper Co. plant. There are many situations in which a unit heater might alternately blow hot and then unheated air, but the most usual one is caused by fluctuating steam pressure. We suggest, therefore, that you check up on this point, proceeding as follows:

1. When the heaters are blowing hot and cold air alternately, observe what pressure is being maintained in the boiler.

2. If there is steam pressure on the boiler when the heaters are blowing hot air, then cold air, it is possible that the steam pressure at the heaters is fluctuating due to the piping design. You can check this by cracking slightly the union in the steam line ahead of the heater. If steam leaks out of the union while the heater is blowing hot and does not leak out when the heater is blowing cold, the trouble is due to the fact that the piping is improperly arranged or else it is too small. If this is the case, we advise that you maintain a higher steam pressure.

3. If steam leaks out of the cracked union at all times regardless of whether the heater is blowing hot or cold air, then the trouble does not lie in the piping design. In this case, please let us know, and I shall arrange to stop off the next time I'm in Ohio.

Very truly,

Earl Brown.

A reply from Mr. Cook came in a few days as follows:

Dear Mr. Brown:

We have checked up on the steam pressure at the Goodland Paper Co. plant as suggested in your letter. We find that they maintain a steam pressure of 5 lb. at all times. I installed a gauge ahead of the heater at the end of the steam main and found that when this heater is blowing hot air the steam pressure is about 3 lb., but when the heater is blowing cold air, the pressure is almost 4 lb.

Fig. 1—Diagram showing the original installation. Under this layout, the heater alternately blew hot and cold air on workers

As this job is getting me more puzzled all the time, I hope you will stop in as soon as it is convenient for you.

Yours truly,

David Cook.

P. S. I forgot to tell you that this is a vapor system with the proper size traps on each heater.

As Mr. Cook's letter of Oct. 6 upset every solution we could think of, I made a special trip to Goodland. I looked up the capacity of the heaters, finding that for a steam pressure of 5 lb. and a room temperature of 60 deg. Fahr. each heater had a capacity of 400 sq. ft. of direct radiation.

Upon my arrival, we drove at once to the plant in answer to a call that morning from the operating engineer.

We found the heater which was at the end of the steam main, installed as shown in Fig. 1, with a steam gauge on the supply connection and a ¾ in. thermostatic trap, without a cooling leg, installed close to the return header of the heater. The boiler pressure was 5 lb. the steam gauge at the heater showed 3¼ lb. and the heater was blowing hot air.

While we stood in front of the heater, we could feel the air stream cool off until it was cool. As the air cooled down,, the needle of the steam gauge above the heater gradually crept up to 4 lb. The air stayed cool

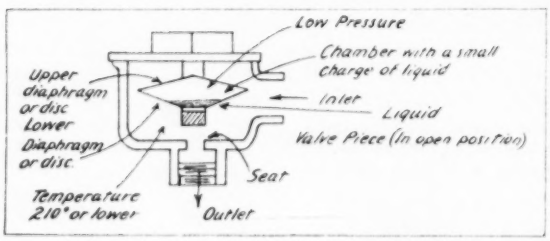


Fig. 3—Cross sectional view of the thermostatic trap at a temperature of 210 deg. Fahr. or lower. Water can now flow out of the heater, thus enabling it again to blow hot air

about two minutes and then it gradually warmed up until it was extremely hot; while this was happening, the needle of the steam gauge gradually dropped to 3¼ lb. again. The air stayed warm seven or eight minutes, then started to cool off as before. We stayed there and watched the heater go through this identical cycle several times, and studied the situation.

"Mr. Cook," I said, "I believe I know what is wrong. I think the trouble lies in the trap location."

"But how could the trouble be with the traps? They are 500 sq. ft. traps, the heaters are only equivalent to 400 sq. ft. of radiation, and there is gravity flow through the traps."

"There's no doubt the traps are large enough and they are working perfectly, but I wonder if you understand just how a thermostatic trap operates. As you probably know, there is a thermostatic element inside the trap, which in this particular type consists of two flat diaphragms or discs fastened together to form a chamber, this chamber containing a liquid. When the thermostatic element is cold, the pressure in the chamber is low, and the lower disc is drawn upward. As the lower disc moves upward it pulls the valve piece up with it and the trap is open.

When the thermostatic element is hot, then the liquid in the chamber forms steam or vapor, which increases the pressure and forces the lower disc down, which in turn forces the valve piece into the seat and closes the traps." (As I talked I drew Figs. 2 and 3 by way of illustrating my point.)

ACTION OF THE THERMOSTATIC TRAP

"But just what has that to do with this job?" Mr. Cook said.

"A very great deal," I replied. "Let us suppose that this trap is designed to close at a temperature of 216 deg. Fahr. when the pressure is 2 lb. What will happen when steam at 2 lb. pressure strikes the thermostatic element?"

"The lower diaphragm will be forced down and the trap closed because steam at 2 lb. has a temperature of 218 deg. Fahr."

"Exactly. And when will the trap open again?"

"When the thermostatic element is cooled below 216 deg. Fahr."

"Right you are. In most traps with 2 lb. pressure, the trap will be wide open when the temperature is about 210 deg. Fahr."

"But how can the thermostatic element cool off?"

"That is just the point, Mr. Cook. It cannot cool off when it is surrounded by steam; it can cool only when surrounded by water or air."

"How can the water cool, because the water condensed from steam at 218 deg. Fahr. has a temperature of 218 deg. Fahr."

"We must provide a place where the water will be cooled. On this job there is no place for the water to cool, so the trap remains closed. With the trap closed, the water piles up in the heater, causing the heater to blow cold air. This continues until the water in the trap cools to about 210 deg. Fahr. Then the trap opens, the water flows out of the heater, and the heater again

(Continued on Page 148)

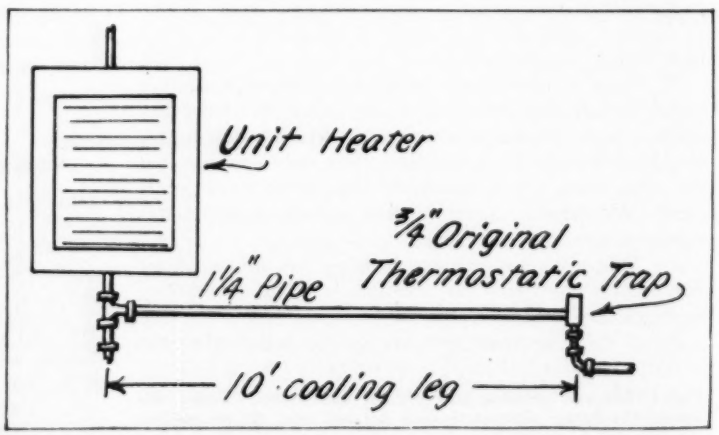
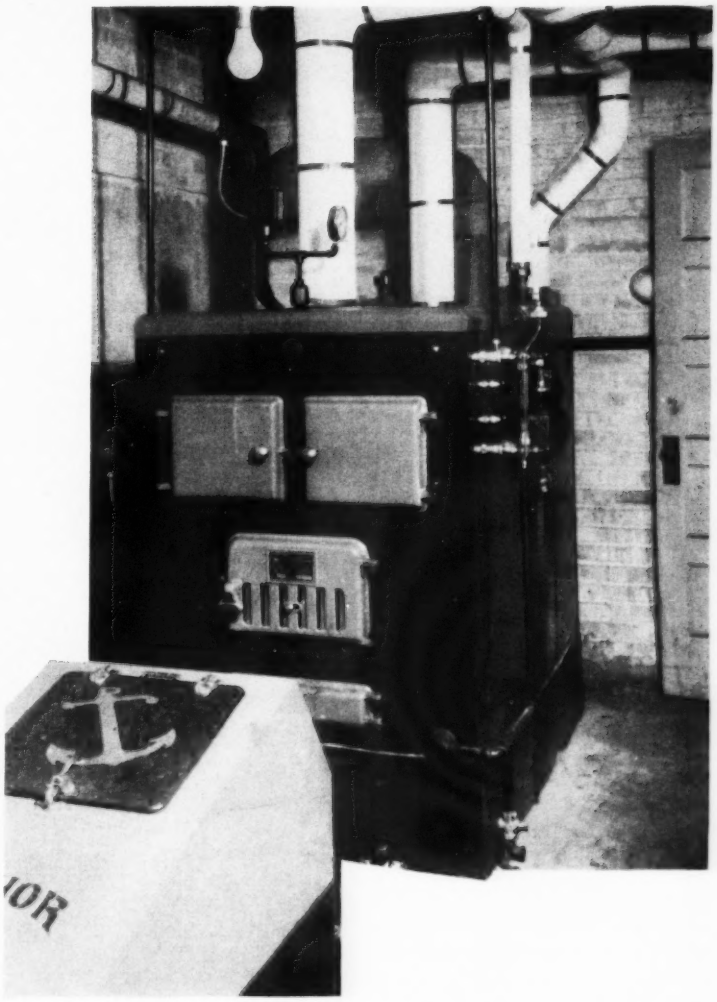


Fig. 4—When the installation was revised as shown in this diagram, with a 10 ft. cooling leg provided before the trap, the unit heater blew uniformly hot air without interruption

Fifty stokers during the first ten and one-half months of this year is the sales record of Osborn & Klingberg. A well planned program which is based on this firm's responsibility and long established reputation is the reason for these succcessful results. Outstanding in this program are



4 Rules for Stoker Sales

"I DON'T know of anything in the plumbing and heating line that is more satisfactory to sell than stokers," said Dan H. Osborn of the firm of Osborn & Klingberg, plumbing and heating dealers of Beloit, Wis. Mr. Osborn spoke from experience for his firm which is one of the veteran establishments of Beloit and in recent years they have done a large stoker business together with other heating, plumbing, sewer and sheet metal work.

"The stoker is simple to install," Mr. Osborn continued. "The average installation can be completed in a day. We have found that no return calls are required on the part of the contractor for service work. From the property owner's standpoint the stoker is a money saver, a time-saver and a labor-saver. I consider each stoker installation we make a good-will booster for our firm."

The installation illustrated on this page, while made by a successful heating contractor-dealer located in Chicago, indicates some of the good sales possibilities in this type of work

During October and the early part of November of this year Osborn & Klingberg averaged about one stoker sale each day. During the first ten and one-half months of 1935 the company sold approximately fifty stokers, and they expect to sell about ten more before the end of the year.

Mr. Osborn notices a different trend in stoker business this year compared with last year, that is, the small-user market is vastly improved. In 1934 the company sold thirty-seven stokers, many of these being industrial installations. The dollars and cents volume for 1935 will probably exceed the 1934 volume, Mr. Osborn says. He is of the opinion that this new sales trend is good evidence that home owners and the owners of other small properties are now in a financial position to make improvements.

There are four principal points that Mr. Osborn em-

"One of the most effective sales weapons in the Osborn sales kit is a photograph album showing stoker installations made by the company."

as a result of noting the condition of the plumbing and heating in a building when we are called upon to perform repair work or some other service. We have been in business here for so many years that naturally we are thoroughly familiar with every section of the city. As a result, we have a good idea of the condition of the heating systems in most commercial buildings and residences and are thus able to determine many logical stoker prospects.

"We consider a building having a steam heating system an especially good prospect for a stoker installation. The reason is that a steam system requires frequent attention from the person charged with the responsibility of firing it. Naturally, this person welcomes any device that will reduce his responsibilities in this connection and consequently lends a willing ear to the stoker story."

"Many of our stoker jobs are sold on a time payment basis," Mr. Osborn remarked, "and quite a few are sold on a fuel-saving basis. The fuel-saving contract, however, is never used for residential work, it being reserved solely for the larger installations. The customer who purchases a stoker on a fuel-saving contract is required to give a promissory note carrying a 6 per cent interest rate. There is no time limit set for taking up the note. He can take up the note at the end of the heating season, or sooner, or he can let it run over several seasons so long as he pays the interest.

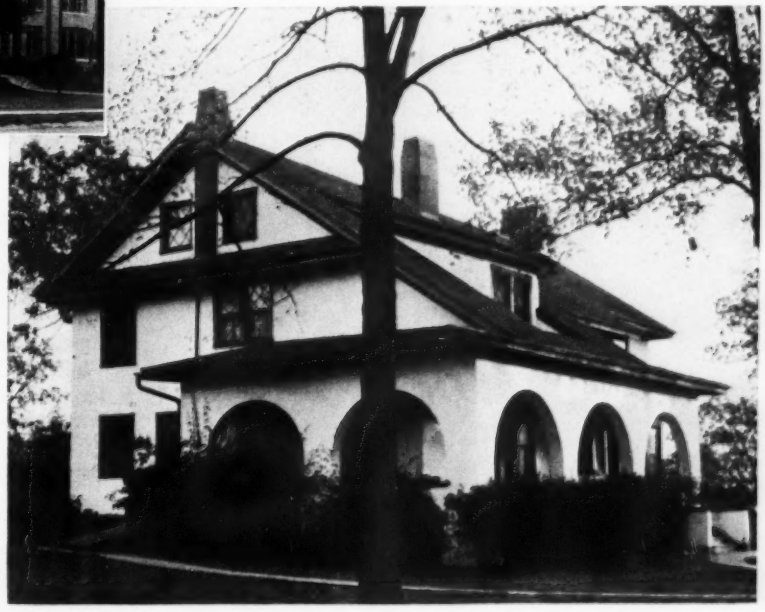
"Recently we sold a stoker installation for an office building for approximately $1,500.00. The customer elected to pay for the device out of its earnings in fuel saving. A short time after the job was completed he sent us a check in full with the comment that he was doing so because of his complete satisfaction with the installation."

Mr. Osborn has observed carefully the methods employed by many stoker dealers during the years he has been handling this type of equipment. He has watched many dealers achieve no end of success in this line and also has seen failures among those who appeared to be incapable or unfitted for this type of work.

ESSENTIALS TO STOKER SUCCESS

"Several things are necessary if any type of dealer is to meet with worthwhile success in selling stokers," Mr. Osborn remarked. "In the first place," he continued, "the dealer must be completely sold on stokers himself. This is absolutely essential and I cannot emphasize this point too strongly. If the dealer is truly enthusiastic about stokers himself he will find it a great deal easier to sell his prospects. Lack of the proper enthusiasm is the reason for most failures in selling stokers.

"It is also essential that the man selling stokers has a thorough knowledge of fuel combustion, that he understands B.t.u. and that he is capable of making an intelligent and accurate comparison of the cost of heating with a stoker *versus* hand firing as well as the cost of stoker heat compared with other types of automatic heating equipment. The dealer must also be able to size a job correctly if he expects to make a success of a stoker line," was Mr. Osborn's concluding remarks on the subject.



Exterior of Beloit Vocation School which is served by the stoker installation shown on page at the left

Another Osborn & Klingberg installation was made in the home shown at the right

Stoker installation made by Osborn and Klingberg in the Beloit Vocational School

phasizes particularly in talking to a prospective stoker purchaser. First, after studying the heating plant in the particular building, he proceeds to tell the prospect how and why a stoker will reduce his fuel costs. Second, he points out that a stoker provides controlled heat; third, that it is a labor-saving device; fourth, that it is designed to eliminate the smoke nuisance.

In some instances, depending of course on the individual prospect's requirements, Mr. Osborn places most emphasis on the fuel saving factor, and at other times he devotes a larger part of the sales talk to the controlled heat and labor-saving advantages, and the elimination of smoke.

But the prospect isn't asked to rely upon the salesman's word alone as to the advantages of stoker heat. One of the most effective sales weapons in the Osborn "sales kit" is a photograph album showing stoker installations made by the company and containing testimonial letters from satisfied customers. The letters are pasted on the back of the pictures and are highly effective in convincing the customer that actual users are satisfied with the results obtained from their stokers.

PHOTOGRAPHS OF PAST JOBS ARE USED

In most instances there are two pictures of each job in the album—one showing the stoker as installed in the basement and the other an exterior view of the building. The purpose of the exterior view is to impress the prospect with the fact that the company has successfully installed stokers in many different types of buildings.

"I wouldn't be without these pictures," Mr. Osborn said. "I am so thoroughly convinced of their value as sales helps that I have just contracted with a local photographer to take pictures of all the stoker installations we have made this year. We have been so very busy since the heating season started that we haven't been able to take the pictures as each job was finished. But we are looking forward to another good stoker year in 1936 and these pictures will be needed to help put it over."

While Osborn & Klingberg don't employ any salesmen—Mr. Osborn doing most of the stoker selling himself—they do make good use of several agencies to assist in the sales work. These include newspaper advertising (both classified and display), direct mail advertising and telephone solicitation. The good-will of satisfied customers is another important sales builder, Mr. Osborn finds from his practical experience.

The company runs an advertisement in the classified section of a local newspaper every day of the year. The copy is changed every two or three days to cover different products, their seasonal nature being taken into consideration at all times. A display ad is run once a week. The copy for these ads is prepared by Mr. Osborn in cooperation with the advertising service department of the newspaper. The copy is changed each week.

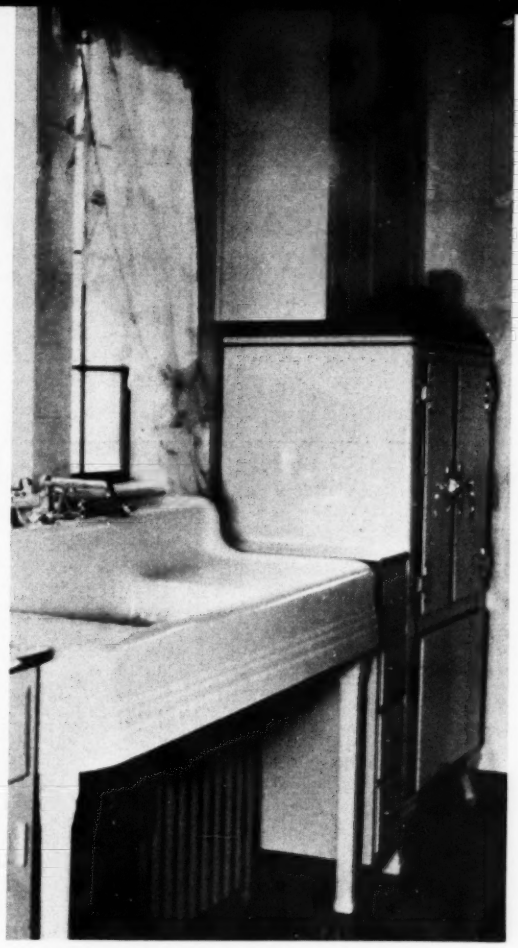
The display ad which appeared on November 13 is devoted to stokers and is a good example of the type of advertising done by Osborn & Klingberg. This ad is 8 in. (four columns) wide by 15 in. high. It lists the names of forty-two local users of the line of stokers sold by this dealer. Above this list of names is the statement: "These people have installed our stokers and are cooperating in eliminating smoke, besides enjoying the benefits of controlled heat and a saving in fuel costs." The copy also includes a short editorial reprinted from a recent edition of the newspaper, entitled "Smoke Gets in Your Eyes." This editorial urged that the smoke nuisance be eliminated in Beloit, and says in part: "There must be a lot of unburned coal which goes up in that smoke and then comes down. You can feel it when it hits you."

FIRM USES NEWSPAPER ADVERTISING

Osborn & Klingberg made good use of the editorial to tell the newspaper readers through their advertisement that their stokers will eliminate the smoke nuisance.

"We use direct mail advertising regularly," Mr. Osborn said. "It is one of our very best advertising mediums," he continued, "and we have actual proof that it has produced many sales both in stokers and other heating and plumbing products and sheet metal work. We always enclose certain pieces of sales literature with our statements.

"We make extensive use of the telephone for soliciting business, calling those persons whom we feel should have a stoker. We get many of our leads for telephone calls



FHA Contest, New Business

page adjacent to the FHA section. We thought that we could stimulate our business by offering a special consideration. The next issue of the newspaper carried an "Introductory Offer" of a discount of 10 per cent on all remodeling work started prior to May 1. Our theory was that after May 1 we would be loaded up with work and could not operate as economically as ordinarily.

The next issue carried the thought of "Spend 5 per cent and save 10 per cent." The entire campaign continued in the same trend and by the middle of April our force had been tripled and we were rushed with immediate work.

Not only did this advertising help us, but we learned from our fellow contractors that some of their customers wanted work done in the same way.

In addition to the newspaper advertising, we carry one-half of a page under plumbing and one-eighth of a page under heating in the classified section of our local phone book. The results of this advertising campaign came overnight. Immediately we were requested to quote on the remodeling of a bathroom.

Our procedure in handling the selling wasn't always the same in every case. Fundamentally we tried to take this course of action.

1. Try to sell the prospect a complete job including the plumbing, heating, tile work, linoleum, plastering, carpentry work and the like.
2. We used as reference "Before and After" photographs of previous work. We also used the copy of DOMESTIC ENGINEERING with its story of our winning the FHA contest as proof of our abilities.
3. Quote on the entire work, figuring a profit on the other trades for supervising and being responsible for their work.
4. Fill out the FHA loan application after quoting the cost of the work and have the owner sign the application. Sometimes the owner objects to signing and we explain that this is part of our service—the elimination of embarrassment and of his having to go to a bank. Also that this is only an application for a loan and not binding in any way.
5. Submit the application to the bank, and when approved, take the note and contract with any necessary sketches or plans to the owner.
6. After the note and contract has been properly signed, we turn the note into the bank with arrangements to be paid out as the work calls for it.
7. We start and finish the work in as short a time as possible. Everything is done with the least amount of disorder. Every night before leaving the job, the workmen clean up, leaving the place as orderly as conditions warrant. Upon completion the entire job is checked.

(To Be Continued)

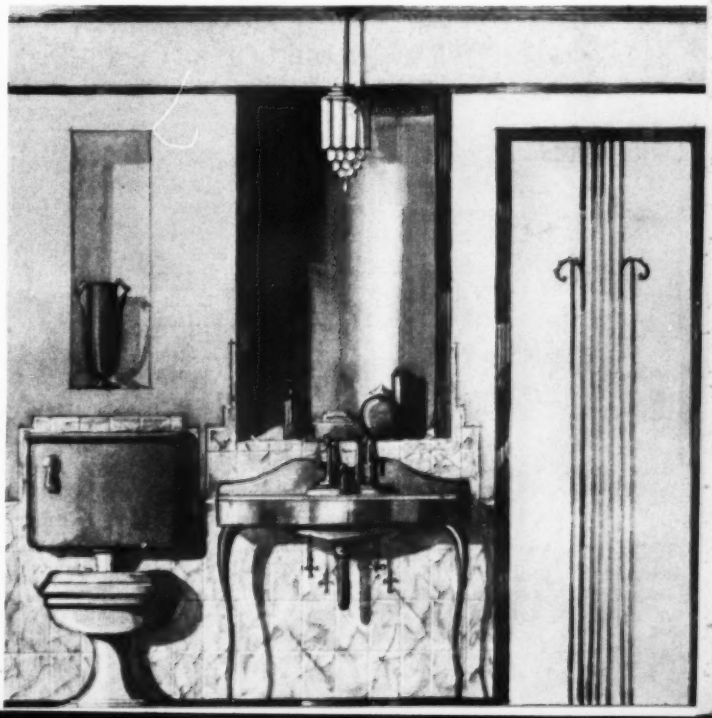
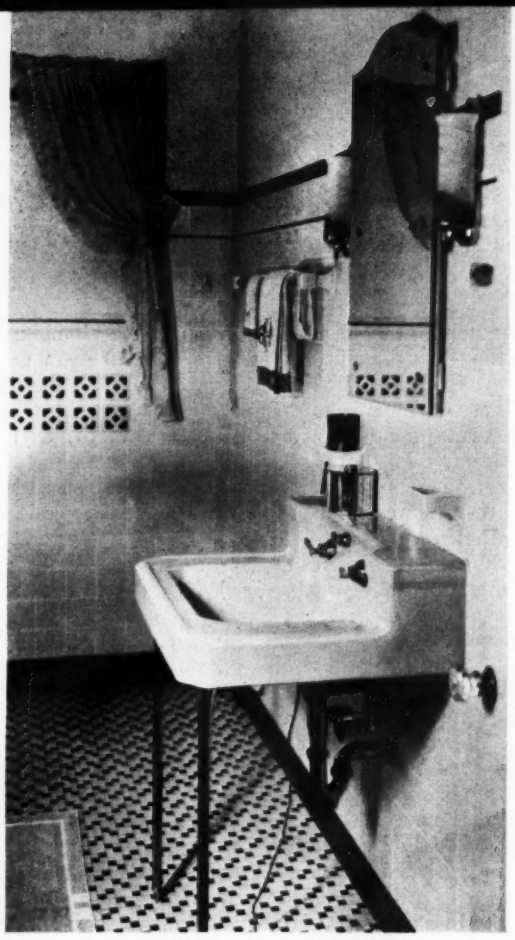


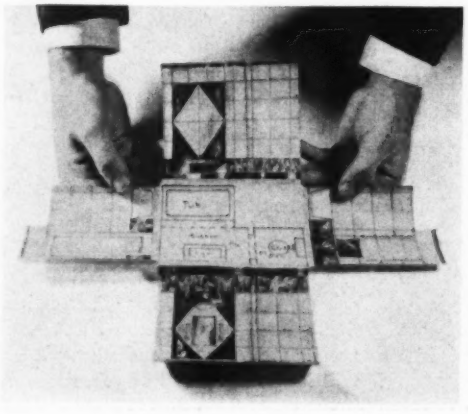
Fig. 3—Above: attractive kitchen installation. Fig. 4—Right: another feature of this contractor's personalized service which includes submitting sketches of his elaborate jobs, in color

The fact that the judges in the First FHA Prize Contest selected this contractor as the winner, was made the basis of his subsequent advertising programs. This article tells how local publicity obtained new business for him. Other selling ideas which tie in with FHA efforts are presented



Contractor Wins Local Publicity Wins

WHEN in February we won the First FHA Prize Contest sponsored and conducted by DOMESTIC ENGINEERING we decided to go out after more work. Advertising seemed to hold the greatest possibilities of letting the modernizing public know about us. Using the fact that we won the FHA contest as a nucleus we planned an advertising campaign. Our local newspaper, which has a guaranteed circulation of 25,000, cooperated with us in helping put across our program.



This program started with the announcement of, "Local Plumbing Firm Wins National Contest," a story, and photographs of our showroom and the presentation of the prize by John J. Calnan, then president of the National Association of Master Plumbers.

At the same time a group of contractors, architects and builders with the help of this same newspaper created a page devoted to FHA modernization work for a source of information. It was decided that this would fit in very well with our program and we asked our newspaper to carry our advertising on the same page or a

Fig. 1—When size of job warrants it, a model of bathroom is made to help prospect visualize the plans. Fig. 2—Illustration above shows a bathroom remodeled by this contractor

Air Cooling With Well Home Market for

By Neil D. Skinner

An air cooling installation was made in the home shown in Fig. 3 using 52 deg. Fahr. well water as the cooling medium. A maximum of 5 gallons per minute is required to maintain a 15 degree temperature difference between inside and outside air temperatures on the warmest days. The cooling load in this home has been estimated to be around 3 tons of refrigeration or an absorption of 36,000 Btu. per hour. A 6 in. stroke deep well pumping head in conjunction with a 2¾ in. cylinder was installed in the pump pit adjoining the foundation of this home. This pumping head with a larger cylinder is capable of producing 500 gallons per hour if additional cooling is desired. It has been found that frequently it is necessary to cool additional space in homes and provisions have been made for this in designing the cooling equipment.

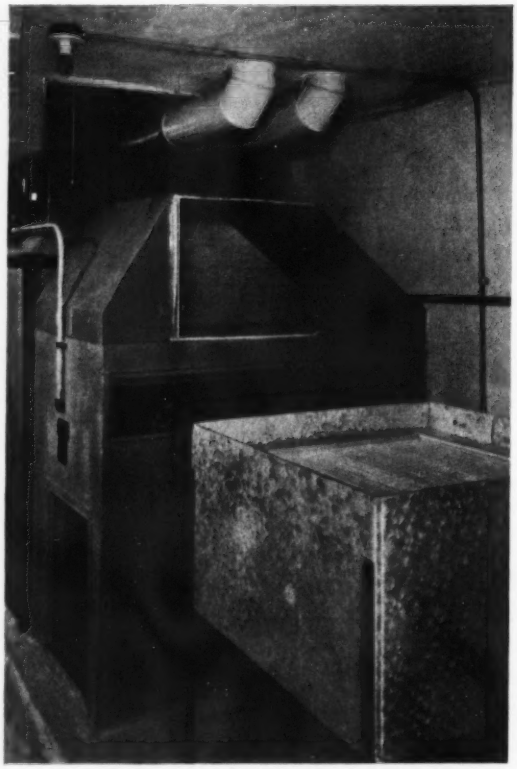


Fig. 1—Construction of cooling unit is shown without shell. Here, the coil is placed in a horizontal position

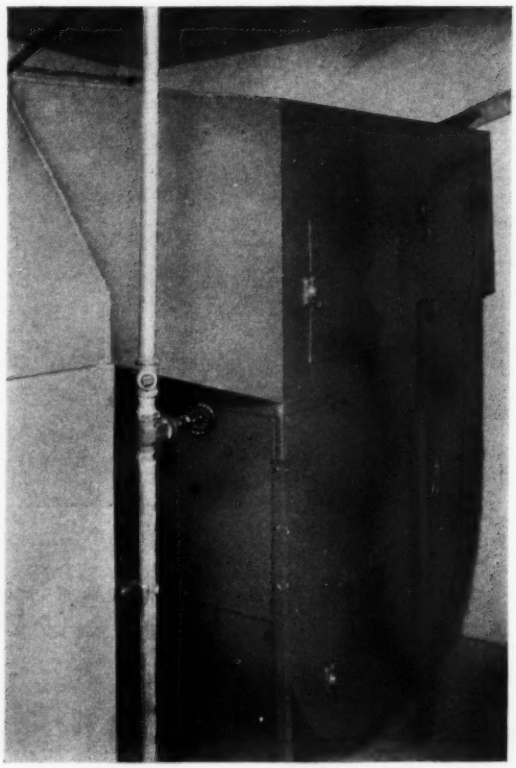


Fig. 2—Finished view of unit containing cooling coil and humidifying sprays. Air from this is discharged to the fan and filter unit and then it is distributed

The equipment used on this project, in addition to the deep well pumping head includes a centrifugal type fan, a cooling coil with fin construction, an electric water valve, a room thermostat and a small relay. Later, it was decided to use the fan for heating and humidification as well as for cooling, for which purpose two humidifying sprays were added to the cooling unit. In the return duct of the air conditioning equipment an enlargement was made of proper size to house the cooling coil and to provide for a water-tight pan with drain to take care of the condensation. Two air filter pads were installed just behind the cooling coil in the return duct for both winter and summer air filtering. The fan was placed at the floor level in order to discharge directly into the base of the heater and in order that the air might be drawn through the cooling coil rather than forced through it.

Water Opens New City Electric Water Equipment

The reason for this was to reduce to a minimum any likelihood of the air channeling as it passes through the cooling coil and to assure an even heat absorption by the water over the complete face of the coil. The duct system installed in this home is employed to distribute the cooled air on this project in the same manner as it distributes the heated air during the heating season. The contractors who made this installation point out that when they are called upon to install air conditioning in a radiator heated home they rely on the radiators to do the heating and new ducts quickly installed are used only for the air conditioning load. High air velocities were avoided on this job. The air velocity through the cooling coil on this particular project was figured at 300 ft. per minute. This provides for only a relatively low resistance against the fan and has been found on this job to be economical on water in-as-much as the final air leaving the coil is within 6 degrees of the water temperature. Also quietness in regard to the operation of the system was designed for. With regard to the necessary amount of fresh air to be taken in from the outside on a system of the nature of this job it was believed that sufficient air enters by infiltration through the cracks and openings around the windows and doors to take care of this. Provisions have been made so that an outside duct can be installed with a manually regulated damper if desired. However, it has been pointed out to the owner that the use of this would increase the load on the system. Water velocities through the cooling coil can be adjusted for the most economical operation of the system. However when needed, velocities can be increased to expand greatly the coil's ability to absorb heat. This flexibility of the system even after being in-

Fig. 3—Exterior view of home which is air conditioned with mechanical equipment using well water as cooling medium

A Reader Suggests a Problem and an Engineer Solves It

A READER writes us for help and suggestions in cooling the second (top) floor of a building 90 ft. by 44 ft. which is to be used as a ladies ready-to-wear display and sales room; it is desired to keep this room at about 90 deg. Fahr. when it is 105 deg. Fahr. outside and to do the cooling by means of city water which he says never reaches over 55 deg. Fahr. to 60 deg. Fahr. even in the hottest days of summer. The space is 12 ft. high and it is the idea to cool this by circulating cold water through unit heaters and then taking the discharge water and spraying it over the roof immediately above the room. He is considering accomplishing the cooling by the use of two unit heaters, circulating the cold water through the heating elements and delivering the air from the units to the room.

In regard to this installation the reader furnishes the following data:

	West Side	North Side	East Side	South Side	Total
	Square Feet				
Glass	277	294	68	0	639
Br. Wall	251	786	460	1080	2577
Roof/Clg.					3960
Floor					3960

Infiltration estimated at 2 air changes per hr.

Temperature Difference Desired ..... 15 F

Coefficients Used: Glass 1.1 Btu.; Wall, 0.28; Roof/Clg., 0.30; Floor, 0.26.

From this our reader has developed heat gain as follows:

639 sq. ft. Glass @ 1.1 Btu. × 15.....	10,543 Btu.
2577 sq. ft. Wall @ 0.28 Btu. × 15.....	10,832 Btu.
3960 sq. ft. Clg. @ 0.30 Btu. × 15.....	17,820 Btu.
3960 sq. ft. Floor @ 0.26 Btu. × 15.....	15,444 Btu.
Total Heat to Be Removed.....	54,639 Btu.
Infiltration Est. at 2 Air Changes or 44 × 90 × 12 × 2 × 0.02.....	1,900 Btu.
Sun Heat	?

Materials of Construction:

Walls:

West Side, 8 in. brick, furred, lathed and plastered.

North Walls, same.

(Continued on Page 67)

stalled provides considerable leaway for the contractor when unexpected conditions arise.

The cooling coil used on this cooling project is of the evaporator, continuous tube type fitted with fins. It is 29 in. wide, 32½ in. long and 13½ in. thick, and weighs 410 lb. With a water velocity of about 25 ft. per minute and an air velocity of 300 ft. per minute, operating tests have shown that the final air temperature can be brought down to around 59 deg. Fahr. This is well below the prevailing dew point and consequently results in dehumidification of the air handled on this job. The average indoor relative humidity which is being maintained on this well water cooling job is between 50 and 60 per cent. The water, as it passes through the cooling coil, is maintained under pressure so that the owner can use it to sprinkle the lawn, irrigate the garden, operate a lawn fountain or even spray his roof to further decrease the cooling load. Where varying well water temperatures are used in connection with air cooling, it has been found desirable to use coils for cooling the air the reason advanced for this job being in installations where the air does not come in contact with the water there is no danger of adding moisture to the air as it is cooled.

This cooling system is controlled by means of a single room thermostat. Frequently, two thermostats are used in well water cooling, one to turn on the fan and the other to open the water valve. At times the fan alone may produce sufficient cooling effect but when it fails to provide the desired comfort, the other thermostat cuts in and allows the cold water to flow through the coil. With the use of the single thermostat, the fan and water valve operate simultaneously. When it is desired to have a continuous circulation of air to prevent stratification, this can be accomplished with the use of a two speed motor where the low speed is manually controlled and the cooling speed is operated by the thermostat.

In figuring a cooling project, those who made this installation usually divide the work into two steps. The first is to estimate the total heat load. This load will include the sensible as well as the latent heat absorption per hour. It is necessary to take into account the nature of the construction of the building, insulation if any, the number of people in the cooled area, the sun effect, air changes, wattage of light bulbs and any other heat giving appliances. The second step involves the selection and installation of the necessary material. The water can be warmed at least 15 degrees as it passes through

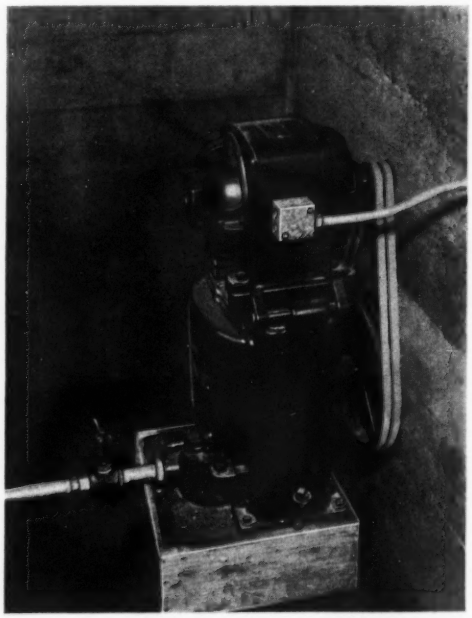


Fig. 5—The pump shown here is rated as having a 6 in. stroke. It supplies the cold well water for the air cooling job described in this article

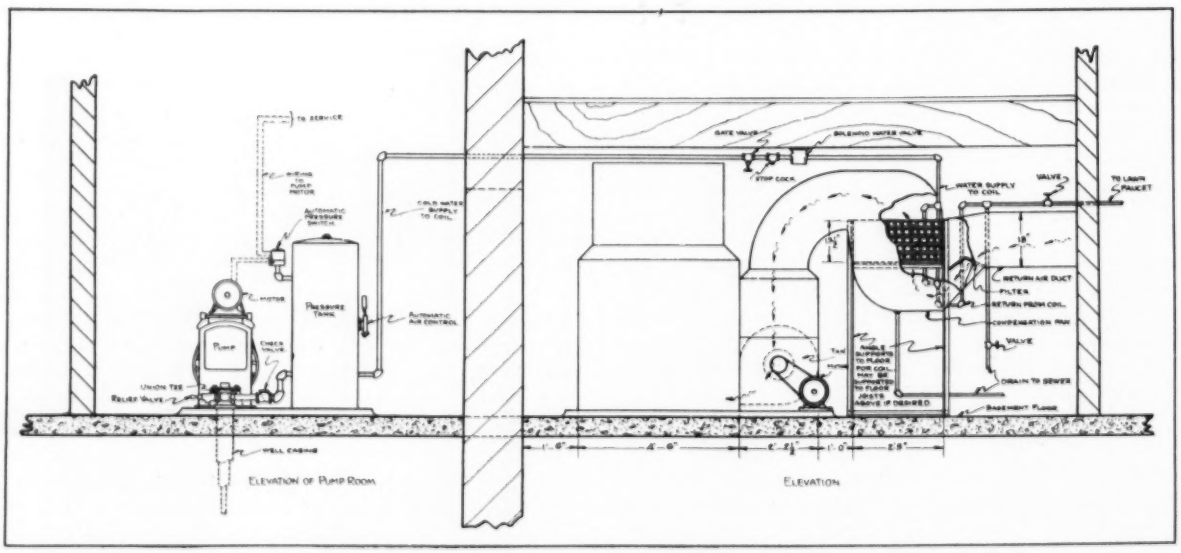


Fig. 4—Elevation drawing illustrates how water supply system and air conditioning equipment were installed in the home shown in Fig. 3. The sketch also shows the operation features

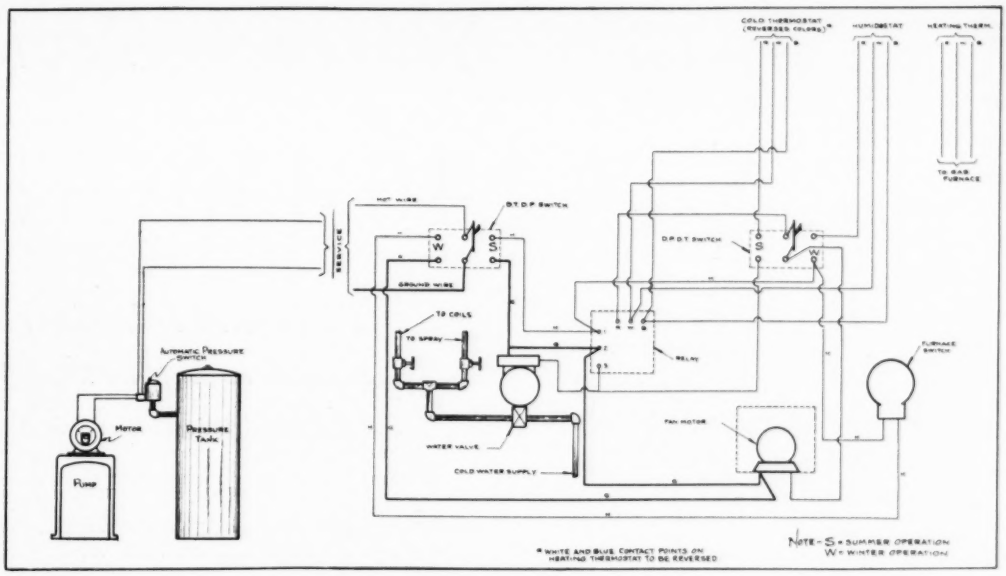


Fig. 6—Wiring diagram for both winter and summer operation of the heating and air conditioning equipment is shown here. The several wiring connections for the automatic water supply equipment, also are illustrated

the coil. If water is warmed 15 degrees, then one gallon of water will absorb 125 Btu. in passing through the coil because it requires one Btu. to raise one pound of water one deg. Fahr. and there are 8 1/3 lb. to the gallon. Since the measure of one ton of refrigeration amounts to the absorption of 12,000 Btu. in one hour, then it will require approximately 100 gallons of well water warmed 15 degrees to equal one ton. This definitely establishes the quantity of water which will be required each hour under full load and with the g.p.h. known, it is an easy matter to select the pump. The size of the fan depends upon the amount of sensible heat to be carried away. Each cubic foot of air circulated, will carry away a definite amount of heat from the cooled area and when the temperature reduction of the air as it passes through the coil, is established, a definite c.f.m. is required and this volume must be supplied by the fan against the existing friction of the duct system. The cooling coil must be large enough to not only absorb the sensible but also the latent heat. The size of the coil depends upon the temperature of the existing water supply, the temperature of the returning air to the coil, the velocity of the water and air as they pass through the coil and the ability of the coil to absorb heat.

(Continued from Page 65)

East Wall, same.

South Wall, 8 in. brick, ½ in. plaster; this is a wall abutting against another building on the south of the one under consideration.

Roof:

Tar and gravel with roof space varying from 12 in. to 4 ft., and with hung ceiling of lath on wood joists with ½ in. plaster.

Floor:

Rough wood floor with ½ in. finished floor on wood joists and with lath and plaster ceiling below.

Space:

All one large room with door between first and second floor so that hot air will not come up from below.

Awnings over windows on west side.

Units:

Two with a rating of 279,000 Btu. with steam at 2 lb. gauge and 60 deg. Fahr. air at inlet.

Our comments on this scheme are as noted in the following discussion. In the first place, the calculation of the amount of heat to be removed from a room to be cooled consists of those items listed in the following:

1. The heat gain from the walls, glass, ceiling and floor for the six sides of the room.
2. The infiltration of air from the outside, if any.
3. The sun effect.
4. Body heat.
5. Electric heat from lights and motors.
6. Heat delivered into the room from any other source.
7. Heat to be removed (latent) due to dehumidifying.

Our correspondent has calculated the first item and has arrived at a total Btu. gain of 54,639 Btu. per hr. His coefficient of 1.1 for glass is correct and 0.28 for the furred walls is very close while in the case of the wall on the south side which is against an adjacent building the addition of the other building wall will add enough thickness to make this coefficient approximately correct for this side also. The coefficient for the combined ceiling and roof is correct and the one for the floor combined with the plaster ceiling below also is very close. If the respective areas of glass, wall, ceiling and floor are correct, the figure of 54,639 Btu. for this portion of the heat gain may be taken as substantially correct.

The next item, of infiltration, is one with which our

(Continued on Page 144)

Starbuck Reviews

40 Different

This article introduces signed to emphasize funda- ed [interest in codes makes

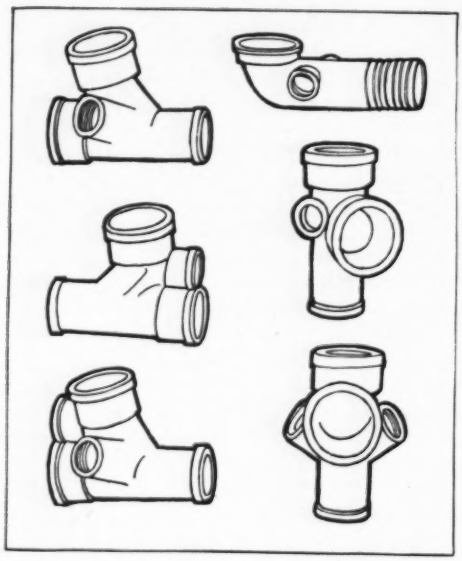


Fig. 1—This illustration shows a number of drainage fittings of the crowfoot type, the use of which has modified venting to a very considerable extent

By R. M. Starbuck

IT is somewhat more than eleven years since the Hoover report on plumbing was first published. In the writer's mind, the publishing of this report marked one of the very greatest forward steps that the plumbing industry has ever taken. The reason for such a statement is the fact that for the first time in the history of the trade, scientific fact and demonstration stood back of the correct practice of plumbing. Scientific study and experimentation was responsible for this wonderful result—this work having been conducted over a period of years by a committee of experts appointed by former President Hoover, who worked in conjunction with experts from the U. S. Bureau of Standards, in Washington.

Perhaps the subject of venting gained more from this research work than any other branch. We had for many years known in a general way that venting was a necessity to the modern plumbing system, but with the coming of the Hoover report we learned definitely why and when and where venting was a necessity.

CONCLUSIONS OF EXPERIMENTS

At the conclusion of a long series of practical experiments, a summary of the conclusion reached is shown on page 176, as follows:

"The results of the preceding tests in connection with other experiments justify a number of general conclusions which may safely be applied to all dwelling-house plumbing, namely:

1. The 3 in. stack is adequate for all separate dwelling house plumbing.

2. It is possible by close grouping of the fixtures around the soil stack to obtain safe and efficient drainage for a single floor and for the highest floor of a more complex system without back venting any of the fixtures.

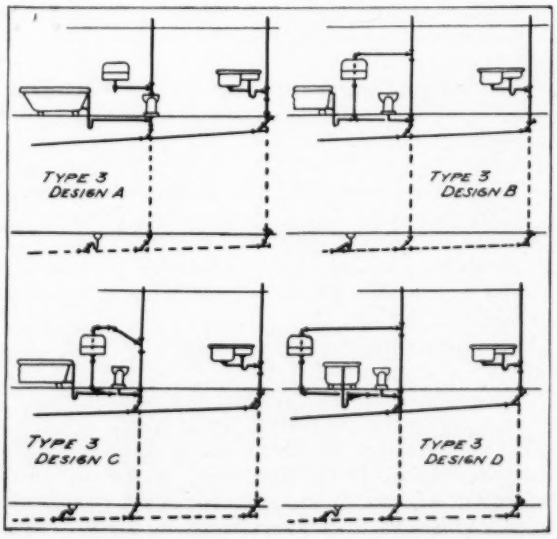
3. It is necessary to back vent individually or in groups all small branch waste lines connecting directly into the stack below a water-closet on the same stack to protect fully the seals of traps on such branches.

4. A back-vented side-inlet branch to a crowfoot fitting on a middle floor offers a degree of protection that makes it unnecessary to back vent the water-closet individually, provided the possible discharge does not exceed that from one bathroom group plus a kitchen sink or 10½ fixture units.

5. In cases where the possible discharge from floors above exceeds 10½ fixture units it is necessary to back vent each separate branch individually, including water-closet branches, on a middle floor.

6. It is necessary to back vent each separate branch

Figs. 2, 3, 4 and 5—Below are plumbing elevations for one-story, one-family houses with two stacks. Figure numbers refer to the sketches marked Type 3, Design A, B, C and D, respectively



Venting Practice,

Elevations Are Covered

a series which has been dementals of plumbing. Renewthis subject especially timely

connection individually on the lower floor including water-closet branches, unless there are 3 ft. or more of straight stack below the fittings taking such branches, in which case the rules for a middle floor may be applied with safety.

7. In a combined sewer system, it is necessary to make ample provisions, in the size of this house drain and house sewer in order to protect fixtures set low on the stack, even when such fixtures are individually back vented."

APPROVED PLAN FOR VENTING

It is with these seven conclusions as a basis, that the Hoover report proceeds to offer an approved plan for venting the plumbing systems for dwellings under practically all conceivable conditions. It does this by first presenting eight different typical layouts of work as commonly found in the plumbing systems of dwellings. These eight layouts are alluded to as designs in the report—designs A, B, C, D, E, F, G and H. If the reader will refer to pages 74 and 75 of the November, 1935, issue of DOMESTIC ENGINEERING, he will see eight plumbing elevations shown, and these, taken in order, are the eight designs we have just mentioned.

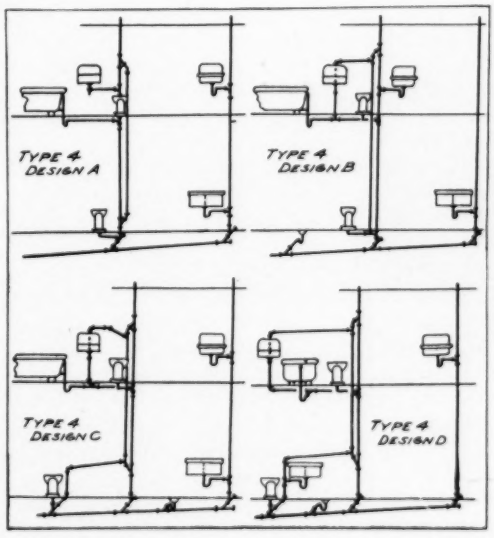
However, these designs represent only sections of entire systems, and so the report proceeds to indicate twelve typical complete plumbing installations, covering the range of residential plumbing. These complete installations the report calls types. Thus, there are shown in the report, 4 types of plumbing systems for one-story one-family houses; 4 types of two-story one-family houses, and 4 types of two-story two-family houses.

EIGHT DESIGNS AND TWELVE TYPES

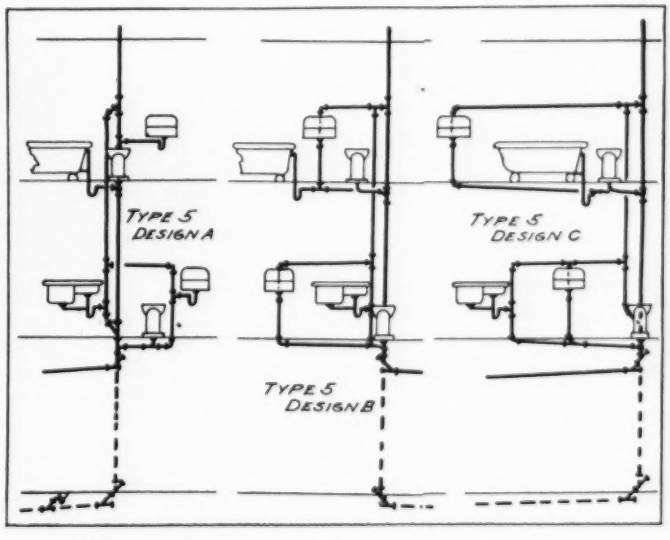
It will be seen readily that when eight designs are combined with twelve types, quite a considerable number of distinct combinations result. Just how many could be figured out is difficult to estimate, but in studying into the subject the writer has found forty combinations that are sufficiently different, the one from the other, to be worthy of a place in this list. In this and an article to follow, we will show these forty elevations and discuss them to some extent.

The plumbing installations which are to be shown,

Fig. 6—Drawing below, Type 4, Design A, and the remaining sketches referred to in the text as Figs. 7, 8 and 9, (Designs B, C and D respectively) show elevations for one-story, one-family



Figs. 10, 11 and 12—Reading from left to right, below, are shown sketches of plumbing elevations which apply to two-story, one-family houses and which are served with one plumbing stack



by no means cover the entire range, for in different ways different jobs vary one from another in an infinite number of details. However, if the student of venting will study the subject as shown in these various elevations, he will gain a sufficient understanding of venting requirements to answer all purposes. To be sure, these drawings pertain to plumbing for dwellings, but the principles involved are the same as for the large installations in public buildings.

Before considering the various plumbing combinations mentioned, it is well to point to the fact that one of the leading practical developments in venting, is the great influence exerted on this part of the plumbing installation by the use of crowfoot drainage fittings. This is one of the modern developments, and we doubt

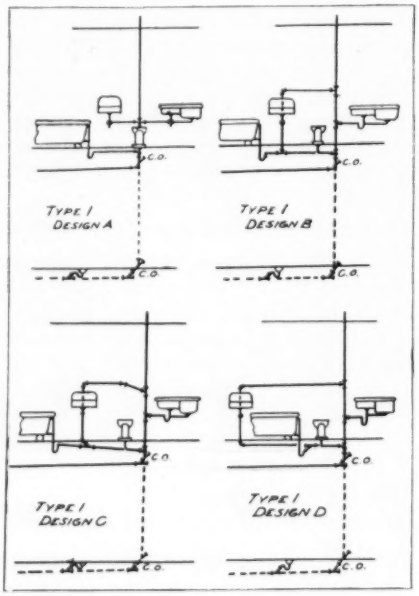


Fig. 13—Upper left; Fig. 14—Upper right; Fig. 15—Lower left and Fig. 16—Lower right These drawings show plumbing elevations for one-story, one-family houses which are served with one plumbing drainage and vent stack

whether many yet realize the influence these cleverly designed fittings exert.

The term crowfoot is the name which has been applied to drainage fittings having one or more side inlets, in addition to the fitting's principal waste opening. Fig. 1 shows several such fittings, and in this type fitting may well be included the cast iron closet bend having one or more waste or vent inlets.

Concerning the merits of crowfoot fittings, the Hoover report has the following statement: "The use of the crowfoot fitting affords almost complete protection from aspirating effects produced by the discharge of fixtures on the same floor." Even more definite credit is given this type of fitting, in conclusion No. 4 shown earlier in this article.

Not only do these fittings simplify venting, but they result in economy of labor; being made for definite situations and conditions, use of them makes the work much more compact, with less number of joints and therefore less obstruction and danger of stoppage.

Now getting back to the consideration of various plumbing installations resulting from the combining of the designs and types used in the Hoover report, we

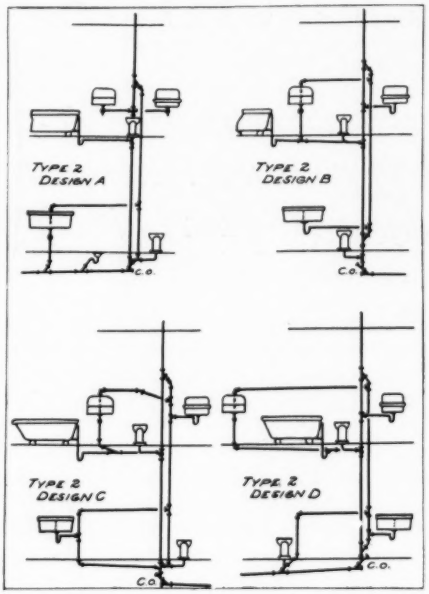


Fig 17—Upper left; Fig. 18—Upper right; Fig. 19—Lower left and Fig. 20—Lower right—Plumbing elevations illustrated here are for one-story, one-family houses with only one stack

will show first four elevations of plumbing systems for one-story one-family houses, otherwise known as bungalows. Naturally this is the simplest kind of plumbing system, especially when so designed that one stack handles both the bathroom and the kitchen fixtures.

The simplest or basic layout, and known in the Hoover report as Type 1, is shown in Fig. 13.

Applying the several different designs, B, C and D to this same type, the other three combinations seen in Figs. 14, 15 and 16 are developed. The next step is seen in Figs. 17 to 20, which show a slightly more complicated arrangement, for the same type of house, but where not all fixtures are on the one floor, but some in the basement. Here also, however, a single stack is used.

Often in bungalow plumbing, especially in the better class, the saving in cost by grouping all fixtures at one point and using only one stack is not a prime consideration. In such cases there will often be two stacks, with all fixtures on one floor, as in Figs. 2 to 5, or with part of the fixtures in the basement, as in Figs. 6 to 9.

Taking the next step brings us into another class of houses, the two-story, one-family house.

The simplest layout for these houses is where the fixtures on the two floors are so grouped that one stack will accommodate them.

Figs. 10, 11 and 12 show elevations for this class of installations.

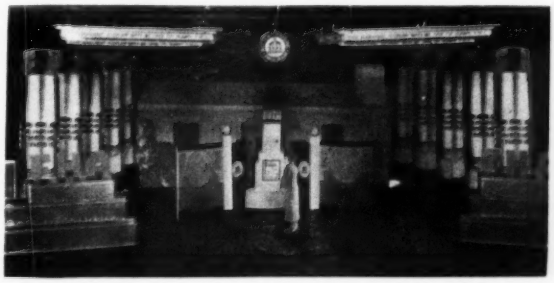
In another article we shall take up the remaining standard dwelling installations.

Contractor-dealers and associations have been active in taking advantage of business-building possibilities in local home expositions. The two photographs shown here illustrate displays of Contracting Plumbers' Association, Inc., of St. Louis, Mo. 75,000 persons attended the exposition

Local exhibits form important part in efforts to stimulate building industry

Home Shows Are Pushed

THE National Home Show Program, "designed to put housing in the minds and mouths of people all over the country for months to come," is swinging into action. The opening gun in the program is the announcement of plans for the first approved show which is to be held in Baltimore, Md., Jan. 4 to 11. A second show is scheduled for San Diego, and will begin on Jan. 15 with the reopening of the America's Exposition.



This photograph shows a model of FHA exhibit which is to be a part of the home shows now being promoted nationally

Similar shows in other important market centers of the country are to follow, plans already being under way to present national housing shows in Kansas City, Mo., Philadelphia, Pa., Buffalo, N. Y., Houston, Tex., Oakland, Calif., Miami, Fla., Minneapolis, Minn., Louisville, Ky., Milwaukee, Wis., Indianapolis, Ind., and Boston, Mass.

The content of all these shows is to consist of comprehensive exhibits provided by manufacturers and distributors of building equipment and supplies and house furnishings. As a central feature of each show, there will be an FHA sponsored exhibit which will include photographs or models of houses.

It is expected that this program, which has been developed by the Manufacturers' Housing Display Council in cooperation with the Federal Housing Administration, will be highly effective in stimulating the desire of the public for home ownership and home modernization. Plumbing and heating contractor-dealers, in company with architects, material and supply men, and building trades councils are scheduled, as representatives of the construction industry, to play an important part in these

(Continued on Page 140)

"Continue FHA"

Publishers and editors of business papers unite to assure extension of Act after April 1, 1936

THAT the work of the Federal Housing Administration should be continued after the date now set for its expiration, April 1, 1936, is the almost unanimous opinion of business paper publishers and editors.

Feeling that some definite move should be taken to make certain that FHA would not cease its activities early next year, DOMESTIC ENGINEERING undertook the job of uniting all of the business publications in the building and allied industries back of a concerted movement to assure the continuance of FHA. The idea was to make certain that the building press would, between now and the expiration of the activities under the Act, continue the good work in keeping readers informed of what might be done to indicate to Washington that the building industry and allied industries recognize the value of this administration measure.

As will be seen from the many business paper covers which have been reproduced here, response has been a wide one. Editors and publishers in the banking field, general building field, furnishings and equipment fields, and in the various divisions of the building industry, have expressed themselves vigorously on this topic.

In any evaluation of the work of the Federal Housing Administration it must be remembered that it has served its prime purpose: to bring private funds into circulation. How effective it has been is indicated in the latest reports of the Administration for the week ending November 16. This was the largest week's business since the inception of the modernization program in August, 1934. The total loans reported for that week under the modernization credit plan was 28,253 for a total of $8,670,067.

This brought the total loans reported since the opening of the modernization program to 579,831, valued at $212,544,959. The week of November 16 topped the previous record week in September by almost 3,000 loans and almost $300,000. It must therefore be admitted that the modernization program has been eminently successful. This appears more clearly when it is noted that the Federal Housing Administration estimates that the total volume of modernization and repair work developed by the program, but not entirely financed under its terms, has amounted to $1,058,849,366. This figure is on the basis of reports from the field offices of the FHA.

The further advantage which should be noted is that the mortgages selected for appraisal under the National Housing Act have amounted to 57,514 for a total of $222,113,718. Since the money for both modernization and mortgages is private money, the effect is an appreciable one.

WHAT BUSINESS PRESS SAYS

Before quoting from statements from editors and publishers, it is interesting to note a statement from Wm. C. Groeniger, President, The American Society of Sanitary Engineering. Commenting on FHA, Mr.

Groeniger says: "As the premier scientific and technical organization in the plumbing field, obligated to encourage, promote, and extend the use of plumbing fixtures, fittings, devices, apparatus, and construction, thereby protecting people against injury to health, The American Society of Sanitary Engineering believes that FHA has made possible means for the improvement and protection of sanitary environment of people essential to the health of the individual and we believe that the extension of the FHA will enable a greater number of people to secure the advantages of health, comfort and convenience afforded by installing safe and sanitary plumbing in American homes."

Samuel O. Dunn, Chairman of the Board, Simmons-Boardman Publishing Co., publishers of *American Builder and Building Age,* has some characteristically searching remarks to make concerning the whole program. He says:

"We appreciate greatly the work that DOMESTIC ENGINEERING is doing in aligning all the publications serving the various branches of the building industry in the campaign to secure Congressional

action amending the National Housing Act so that the low cost installment financing of modernization and repairs will not terminate on April 1, 1936. *American Builder* has entered whole-heartedly into this campaign. We have a leading editorial scheduled for the December issue supplementing our regular 'Modernization' department which appears every month in the *American Builder.*"

Howard Myers, Editor of The *Architectural Forum,* has a word to say even for those critical of affairs at Washington: "DOMESTIC ENGINEERING is to be commended," he says, "for its program to insure continuation of the FHA. While there are many who are critical of various activities undertaken by the present Administration, I have yet to meet anyone in or out of the building industry who is unwilling to recognize the fundamental merit of the FHA program which, in our judgment, is doing more to revive private enterprise in building than any other single force."

A. L. Ford, Managing Editor of *American Lumberman,* is able to quote a reader as well as to reveal the general feeling of the lumber industry concerning FHA. Here's what he says: "The lumber industry as a whole looks with considerable favor upon the National Housing Act and is desirous of having it extended. The retail lumber and building material dealers, who are in closer contact with the actual functioning of this legislation than are the manufacturers, are finding it helpful and practically all of them desire to have it extended; although many of them feel that it could be improved in many respects."

Here and there it has been said that bankers have been unwilling to support this movement to stimulate the building trade. However, the publishers of the two banking publications referred to immediately following this paragraph, have carried a great deal of material on FHA. Editor John Y. Beaty of *Bankers Monthly* sends tear steets from his publication which indicate the varied types of articles being carried. One of these articles tells of the cooperation between local architects and a Kalamazoo, (Mich.) bank in opening an advisory service for FHA applicants. Another of these articles is a study of the conditions necessary for the modernization loan if it is to meet the requirements of FHA insurance.

The second of the banking papers mentioned is *Banking,* which is the journal of the American Bankers Association. William R. Kuhns, Managing Editor, has this to say concerning the interest of his publication in FHA financing:

"As a publication, we have been greatly interested in housing progress from the time the housing bill was being discussed, prior to its enactment. You may recall that one of the leaders in the movement from the beginning was Robert Fleming, President of the Riggs National Bank of Washington, and now President of the American Bankers Association."

From Hugh K. Taylor, Editor-Manager, *Building Material Merchandising Digest,* comes a copy of his November issue. In this issue, under the title "Trade Problems and Topics", the paper has this to say: "Both manufacturers of, and dealers in, building materials of all kinds are wanting to know whether or not the FHA will continue in existence after the expiration of the Act which created it, next April. . . . This interest in the continuance of the FHA naturally and logically arises from the fact that it has done a wonderful job of merchandising for the building industry and for the household equipment industry."

Electrical Contracting is another of the papers in the building field favoring the continuance of FHA. S. B. Williams, Editor, makes the following statement: "With new residential construction just opening up, it would be a mistake for FHA to be abandoned.

"For this reason we are glad to endorse your efforts to secure the continuance of FHA, and we wish you much success."

L. E. Moffatt, Editor, *Electrical Merchandising,* writes that FHA has become of growing importance in

(Continued on Page 151)

Use of Piping as Electrical Conductor Is Opposed

"The entire plumbing industry should be kept informed on this subject." Wm. C. Groeniger

By Chas. F. Meyerherm*

THE term bare neutral interior wiring refers to a method of house wiring in which the neutral conductor is a bare or uninsulated copper wire run in iron conduit or metal armor. In the ordinary forms of house wiring both the line and the neutral conductors are run with insulated wires having both a rubber and a moisture resistant braid insulation. Such wires are run in iron conduit or metal armor or by themselves on porcelain insulators attached to the frame work of wooden buildings. For purposes of protection against high voltage hazards the neutral conductor of a house wiring system is grounded to a water pipe at the point of service entrance, but according to the existing National Electric Code no other intentional connections between water pipe and neutral are permitted. On account of the insulation on the neutral conductor, accidental contacts between the neutral conductor and the water pipes are not likely to occur unless a complete breakdown of the insulating covering of the neutral takes place. Even such breakdowns are not likely to cause a substantial part of the current in the neutral conductor to shunt over the pipes because the electrical contact between the neutral wire and the enclosing conduit or metal armor seldom constitutes a good low resistance connection.

WIRING CONNECTED TO HOUSE PIPING

In view of the fact that the neutral conductor of house wiring systems generally is definitely connected to the house water pipe through the so-called protective ground connection, some electric light and power utility operators have argued that National Electric Code insulation on the neutral wire is a waste of money, and that a bare or uninsulated neutral wire would reduce the cost of electrical installations and correspondingly increase the market for electric light and power. Other electric light and power utility operators, and some of the electrical inspection authorities, have taken the opposite viewpoint and have maintained that the savings incident to the mere omission of the insulation on the neutral wire are insignificant compared to the total cost of a wiring installation and that these savings are more than offset by the construction and stray current complications which an uninsulated conductor involves.

The electrical committee of the National Fire Protection Association has modified successive editions of the National Electric Code so as to afford increased recognition to bare neutral wiring, first for service entrance cable, then by sanctioning trial installations of bare neutral house wiring and this year by approving electric range circuits which are run with a special form of bare neutral entrance cable.

THE TREND IS TO BARE NEUTRAL

The tendency, according to all indications, now seems to be toward increasing and ultimate complete recognition of bare neutral wiring. With the latter accomplished, it is only a short step to a single conductor wiring system using the conduit or armor and the building pipes and metal work as the neutral conductor of the system, and the arguments now being used in favor of bare neutral will apply with equal force to a no-neutral system because installation costs can certainly be reduced by the omission of one wire of the circuit, and if the pipes and building metal already carry plenty of stray current with a bare neutral wiring system, why quibble about a little more stray current if one-half of the wire cost can be saved? This apparent trend toward unrestricted use of non-electrical metallic systems as current carrying parts of electric light and power distribution systems and the rather general tendency to interpret the grounding privillege as a license to so use the water pipes, caused the American Water Works Association at its 1935 convention to revoke its previous sanction or approval of the use of water pipes as protective grounds for electric systems and to advise water works operators that metallic interconnections between water pipes and electric systems should only be permitted by special agreement and under the most rigid supervision and control.

The American Water Works Association has opposed bare neutral wiring practically from the beginning, because it objected to the stray current hazards which this form of wiring inherently involves. In so doing, the water works operators had in mind the fact that increased stray electric currents on house piping might and in all probability would involve increased stray

(Continued on Page 149)

*Member, American Water Works Association Committee on Electrolysis and Electrical Interference.

This paper consists of excerpts from an address which was delivered before the annual meeting of the American Society of Sanitary Engineering at New York City in August, 1935.

Merchandising Counsel

Here is a new service being offered our readers—and it is evidently going to be a very popular one. Readers are invited to submit to the MERCHANDISING COUNSELLOR problems they find difficult. In this article is seen the use made by one of our readers of material offered last month.

THE first of those to write us, following the opening of this department in our November issue, was Albert L. Scheible, a heating specialist of Saratoga Springs, N. Y. On the next page we reproduce the advertisement which Mr. Scheible took from this department last month.

Particular attention is called to the change which he made, which tells the prospect to ask for another sales help—a change which must be applauded as indicating an alertness in using all of the sales material available. In our November issue we introduced the editorial section in color which the reader of our paper can send to his prospective customer. The copy is so written that the four pages really contain a complete presentation. In the case of November we talked about heating comfort and just what a pair of prospective customers learned when they talked over their problem with the heating contractor.

Note, therefore, that Mr. Scheible has tied together the advertisement prepared by the Merchandising Counsellor in November, with an offer to furnish copies of the four-page color section entitled "What Mr. and Mrs. J. Brown Jones Learned About Heating Comfort." In this way, Mr. Scheible strengthens an advertisement which was aimed at short-circuiting the constant stress on cheap products which is characteristic of mail order and direct-to-you type of merchandising. In addition to this, he is able to offer to his people in the territory served by the paper in which he advertises, a very fine piece of sales literature.

Reprints of the four page color feature "What Mr. and Mrs. J. Brown Jones Learned About Heating Comfort" as it appeared in our November issue are available for our readers. Also available to our readers is this month's feature which takes Mr. and Mrs. J. Brown Jones through the process of modernizing the plumbing in their home.

Mr. Scheible's letter reads as follows: "In your department in the November issue of DOMESTIC ENGINEERING you produced a newspaper advertisement which caught my eye for the reason that I have been looking for just such material for some time. I refer to the one titled 'You get just what you pay for—or less!'

"I have not used the ad just as it appeared in your article, but have made some changes, the most important of which was adding a paragraph inviting requests for 'What Mr. and Mrs. J. Brown Jones Learned,' another article appearing on page 56 of the same issue of your wonderful business magazine. I understand reprints of the article are available and would appreciate it if you would arrange to have sufficient copies sent me to take care of any requests I may receive from my advertisement in the 'Saratogian,' Saratoga Springs, which possibly reaches forty or fifty thousand people.

"As this is the first newspaper advertising I have done, being fortunate enough to have been kept busy from recommendations of customers alone, I am not in a position to tell you how many copies of this reprint will be necessary, but I am sure that from your past experience

you should be able to judge this amount for yourself.

"The advertisement will appear in the November 14 copy of the newspaper, for the first time, and I will send you a copy of the ad and let you know what results are obtained."

"If you have any suggestions for a follow-up in my case, I would appreciate hearing from you at your earliest convenience because of my immediate need."

Last month our problem was submitted by a reader who is having difficulty—as so many dealers are having difficulty—with direct-to-you and mail order competition. While we furnished that reader, and any others who care to use it, some ammunition for this particular battle, we do not feel that we have by any means exhausted the subject and an early article will deal with some unique methods of merchandising the evidence that makes a plumber a master plumber. That evidence is, of course, his license.

This month we have several interesting minor copy problems submitted by readers. The first of these readers works in a city where it has been possible for him to merchandise a service consisting of clearing the water lines from main to meter. The one piece of copy which we have before us and which this contractor has used, consists of a blotter which carries a heading "Low Water Pressure?" and this headline is followed by copy reading: "$10.00 will remedy same or no charge."

In his letter, our reader also thinks of the possibility of pushing along this idea of recovering complete water pressure from the main by a replacement of water piping in the house.

Our copy covers both of these problems and we call attention to the fact that the copy for the first blotter, postal card or newspaper advertisement has an illustration which is made up entirely of characters which should be in any print shop. No drawings are necessary, thus keeping down the cost.

The idea back of this copy is, briefly, that in offering any service it is necessary to bear in mind that the service must relate to the customer's problems and what is going on in the customer's mind. Thus we refer to the fact that where there is a clogging of the supply line, and a faucet is opened, an annoyingly small amount of water is secured. In other words, this copy goes straight to the desire of the customer for that full stream of water from a faucet, and recalls the annoyance he or she experiences when nothing but a trickle is to be had.

This idea of relating the product or the service to the needs of the prospect is an important one. How important, may be judged from the fact that no text book on advertising has ever been written, and no instructions to salesmen have ever been issued, which have not started from this point. After all, it is only good everyday reasoning. Most people are not interested in anything until they see how it helps or hurts them.

The second of these little advertisements deals with the second suggestion this reader brings up—that is, the

Here is a good example of how an alert reader used one of the newspaper ads in our November issue. He made some changes. First, he took larger space than we had shown. Second, the arrow points to the manner in which he tied this department up with the offer to supply reprints of the new customer feature we started last month. He has been kept busy with inquiries, he says.

Do You Get What You Pay For— *or Less?*

You can buy heating products for almost any price you choose to name—but the only time you will get quality products and quality service is when you pay the honest cost that is involved in making an honest product, paying on honest wage to makers and installers — and knowing that HONEST SERVICE will be at your command whenever you need it in the future.

It's obvious, then, that QUALITY IS CHEAPER in the long run.

Ask for "What Mr. and Mrs. Brown Jones Learned."

A. L. SCHEIBLE

HEATING PLANTS — OIL BURNERS
AIR CONDITIONING

Sales and Service

65 MAPLE AVENUE **Phone 2428-J**

WHEN you open a faucet, you want a full stream of water not an annoying trickle.

PLUMBING
HEATING
NEW WORK
REPAIRS

We can correct low water pressure immediately

Your Name

Address *Telephone*

Above at left is suggested copy for a reader who specializes in cleaning water pipe from main to meter. Below is copy for same reader, who also makes a specialty of replacing house water piping

possibility of securing business in replacing piping in the home.

Here again we have used nothing but what will be found in any good print shop and the two black circles serve in a simple way to bring home what happens when pipe becomes clogged with rust or lime. Notice, too, that we go back again to the annoyance of not getting a full stream of water when the faucet is opened.

The second of the requests for assistance which we treat in this article has reference to the lettering to go on the side panels of a plumbing shop on wheels.

It appears to us that in attempting to merchandise this type of service, the telephone number is almost more important than the name of the contractor. In the copy which our reader submitted for this lettering nothing but the street address was given.

If a new piece of water pipe in your home was this large . . . and if rust and lime have clogged it so it's now—this size

You can see why you don't get a full stream of water when you open a faucet

Your Name

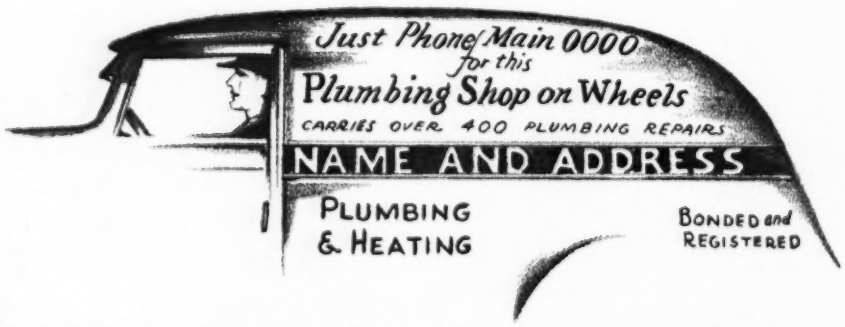
Address *Telephone*

It should be remembered that for a great part of the time at least, this plumbing shop on wheels is more or less of a moving billboard and those who see it must get the message quickly. Even when it is standing before the home, those who are passing it in other cars must be able to catch the significance of the wording on the panel very quickly.

Particularly must they be able to learn without effort how they can get in touch with the dealer who offers the service of the truck. Even though the person walking on the sidewalk stands to look at the truck, and reads the lettering on the panel he should, nevertheless, be able to take away from his view of the truck the easiest possible method of getting in touch with the operator. That means, of course, he must take away with him the telephone number.

This, together with the line about the 400 plumbing repairs which can be made from the truck as it is equipped, form the most important elements of the advertising message to be painted on the side panels. In the arrangement shown in the sketch, we feel that these two factors would be properly displayed and easily grasped.

We want this department to be a work-a-day and practical service department for the use of our readers. You may have, for example, a product which you have just taken on and in connection with it you may wish to conduct a campaign of some kind. We will be glad to suggest copy and campaign methods. You may have some kind of a special offer in connection with the product, or with a service. We are at your service.



Suggested copy for side panel of a shop on wheels. Note display of the telephone number

Units *for* Conditioning

Being the seventeenth in the series of articles by . . . . .

H A R O L D L . A L T

UNIT air conditioners produced in a multitude of types and designs; many of these will not survive the test of time and usage but others are here to stay and will be improved and cheapened as time goes on. They may be roughly divided into two general classes, these being the units intended for installation in the room conditioned and those intended for installation outside of the room, usually in the cellar and often in connection with an existing system of warm air furnace pipes. Several types of conditioners suitable for cellar installation, or in some other place outside of the room or rooms to be conditioned, have been illustrated in a previous article and, while it is impossible within reasonable space limitations to present illustrations of all types of units now on the market, an attempt will be made to discuss a few of the representative productions with the understanding that there are many others than the particular ones shown, most of which differ, however, in minor features only.

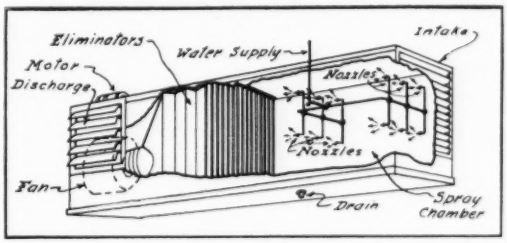


Fig. 1

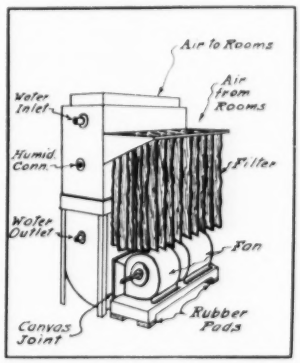


Fig. 2

GENERAL TYPES OF GROUP UNITS

The term "group units" will be used in this discussion to cover all conditioners of unit type outside of those intended for installation directly in the room or space to be conditioned. Some units, particularly of the industrial type, are intended to be installed in the space to be conditioned yet can be so used only where appearances are unimportant. It will be noted as the different types are reached that there is a gradual progression from one to the other so that it is difficult to draw a line at any fixed point and say every unit on one side of the line is one thing and every unit on the other side of the line is something else.

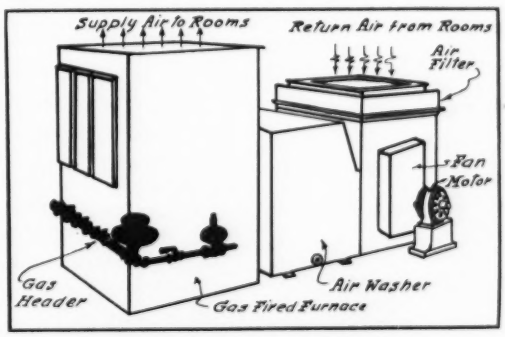


Fig. 3

OVERHEAD AIR WASHER TYPE OF UNIT

A unit which approximates the air washer in general design is shown in Fig. 1 and is intended either to be hung on the ceiling of the space to be conditioned —such as in a large factory office or similar location— or it may be installed in some out-of-sight location and the supply and return air piped to and from the space to be conditioned. This unit consists of the usual air washer spray nozzles, eliminators and pan, through which the air is drawn by the fan shown and discharged in the ordinary case through a set of adjustable louvres. There is no attempt in this unit to supply heat or cooling, its purpose being in winter to add humidity to the air by simple evaporation of the spray water and in the summer to do a certain amount of cooling by the evaporation of a small portion of the spray water and the cooling which may be secured by using a constant supply of cold water secured from whatever source may be available.

When desired, a refrigeration machine may be used in connection with the unit although located at some other point, and the wash water may be cooled and circulated just as in the regular air washer when performing cooling and dehumidifying; no air filters are used and the recirculation of the room air is carried on 100% at all times. It will be noted that this apparatus is modeled very closely after the equipment used in the regular central air conditioning plant and seems particularly suited for conditions where all the advantages of a central plant are desired but on a scale too small to justify

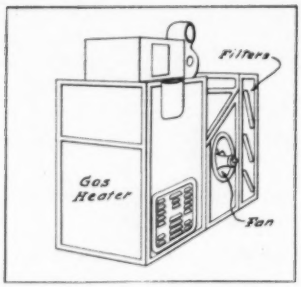


Fig. 4

the operation of the larger central plant.

WARM AIR FURNACE PIPE UNIT

The unit illustrated in Fig. 2 employs a cloth bag filter and can perform both heating and cooling when attached to a set of warm air furnace pipes with a recirculation pipe back to the inlet of the unit. It is equipped with a double heating and cooling element, one section of which is set above the humidifier and the other of which is set below the humidifier; in summer, cold water—either refrigerated or direct from the street main—is circulated through both sections of the element and in winter hot water from a hot water heating boiler is similarly employed in the heating element for heating.

This equipment also may be secured with a single element, and when so equipped is said to do everything that the double element will accomplish, except that the cooling done in the summer will be somewhat curtailed owing to the reduction in the amount of cooling surface. Humidity is provided for by spraying water in the space between the two elements. To eliminate noise, the bed plate on which the fans are mounted is set on rubber pads and the fan discharges are connected to the apparatus with canvas joints. In the illustration the equipment is shown with the filter casing removed so that the interior arrangement will be visible.

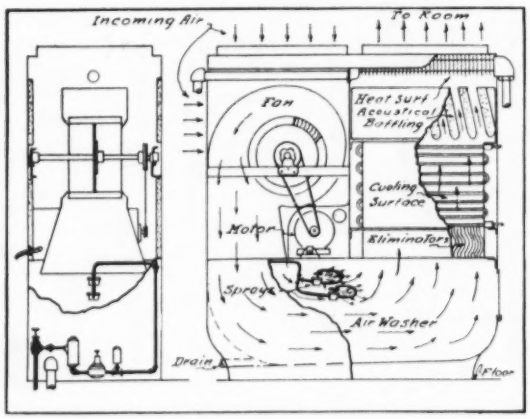


Fig. 5

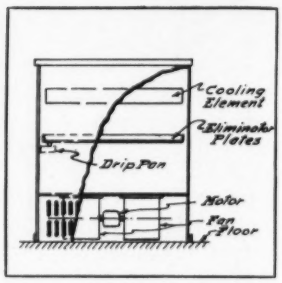


Fig. 7

GAS-FIRED GROUP UNIT

A unit also suited for application to an existing system of warm air furnace pipes with a return circulation pipe is illustrated in Fig. 3, this unit being gas-fired with a steel furnace and including an air filter, fan, air washer in miniature, and the necessary motor drive. No attempt to use refrigeration is made with this unit, the manufacturer advocating the use of the air washer in the summer during the day, when the air is hot and at a comparatively low humidity, and the running of the apparatus at night without the air washer in operation, when the outside air is cooler. This equipment does not claim to humidify the air so much as it does to give more comfortable conditions inside of the building by natural means.

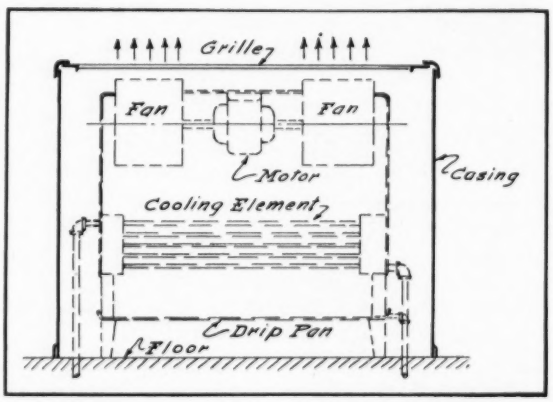


Fig. 8

Another type of gas - fired group unit is shown in Fig. 4, this equipment filtering, humidifying, heating,

(Turn to Page 83)

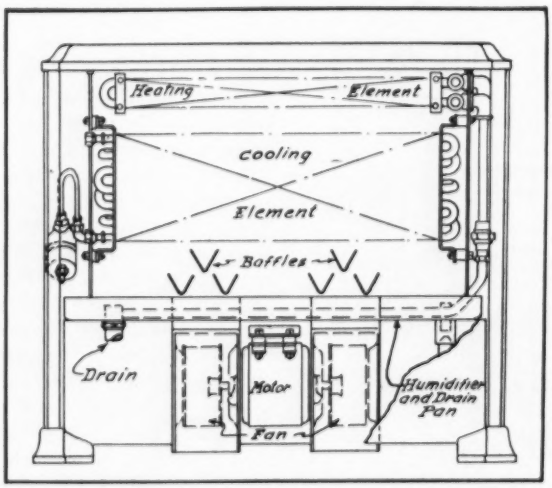


Fig. 6

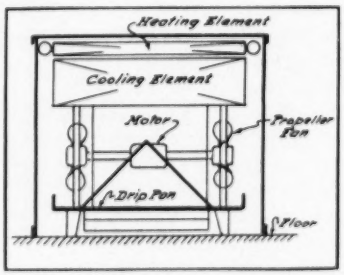


Fig. 9

38—

Problem in Air Cond.

Problem:

A certain assembly hall has a total transmission loss of 180,000 Btu. per degree difference between the inside and outside; roof area is 6,000 sq. ft., glass on East side 500 sq. ft., South side, 300 sq. ft., West side, 700 sq. ft.; seats, 2,000; standees, 500; electric lighting 20,000 watts.

Design an air conditioning system for 80 F and 40% R. H. inside when it is 90 F. and 50% R. H. outside, using air 10 F. below room temperature.

Solution:

Sensible heat to be removed consists of:
Walls, ceiling, floors, partitions, glass, etc.

180,000 Btu.x(90 F.-80 F.)=	1,800,000 Btu.
2,500 persons @ 200 Btu.=	500,000 Btu.
Elec. 20,000 watts x 3.415=	68,300 Btu.

Sun Effect on

Roof 6,000 x 10 Btu.	=	60,000 Btu.
E. Side 500 x 50 Btu.	=	25,000 Btu.
S. Side 300 x 40 Btu.	=	12,000 Btu.
W. Side 700 x 50 Btu.	=	35,000 Btu.

Published by Automatic Heat and Air Conditioning

39—

Problem in Air Cond.

(Continued)

The maximum sun effect will be the greatest Btu., developed by any one of the three combinations of

East Side sun effect	25,000 Btu.
or	
South Side sun effect	12,000 Btu.
Roof sun effect	60,000 Btu.
or	72,000
West Side sun effect	35,000

which indicates that the greatest sun effect is produced when the sun is shining at a maximum on both the south side and the roof or 72,000 Btu. per hour.

Now the sun effect is a day time load and the electric lighting is a night load so that both do not exist simultaneously. The maximum heat removal for both of these items will be the greatest amount resulting from either, or

Max. Sun Effect	72,000 Btu.
Max. Elec. Heat	68,000 Btu.

Therefore, 72,000 Btu. will be used as the cumulative effect of both.

If any electric load exists in the day time it must be added to the sun effect.

Copyright, 1934, by H. L. Alt

These four tables carry on the series which was started in the January issue. The information has been developed so as to be similar to that which the reader might gather in the form of notes while studying complete articles and text books on the subject of air conditioning

37—

Example in Sun Effect

Example:

A room 50′x20′x10′ high has 10 windows 4′x6′ in the 50′ east wall, same in 50′ west wall, three windows same size in 20′ south wall, windows inset 12″, 1000 watts of electric lighting; what allowance for sun effect (1) without roof above? (2) with roof above?

Solution:

East wall, 10x(4′-1′)x6′x50 Btu.. 9,000 Btu.
South wall, 3x(4′-1′)x6′x40 Btu.. 2,160 Btu.
Roof, 50′x20′x10 Btu.....10,000 Btu.

South wall and roof combined...12,160 Btu.
West wall, 10x(4′-1′)x6′x50 Btu. 9,000 Btu.
Electric light, 1000x3.415..... 3,415 Btu.

Max. sun effect without roof = east or west side at ..... 9,000 Btu.
Lighting allowance 3,415 Btu.
Added to refrig. load ..... 5,585 Btu./12,000=0.47 tons.

Max. sun effect with roof = south wall and roof at.....12,160 Btu.
Lighting allowance 3,415 Btu.

Added to refrig. load ..... 8,745 Btu./12,000=0.73 tons.

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40—

Problem in Air Cond.

(Continued)

Sensible Heat to be Removed:
Walls, Roof, etc.....1,800,000 Btu.
Body Heat ..... 500,000 Btu.
Elec. and/or Sun Ef..... 72,000 Btu.
Total Sensible Heat.....2,372,000 Btu.

Amount of Air Required:

$$\frac{2{,}372{,}000 \text{ Btu.} \times 55}{10 \text{ F.} \times 60 \text{ Min.}} \text{ or } 217{,}433 \text{ cfm.}$$

Pounds of Air per Min.:
217,443 ÷ 13.34 or 16,300 lbs. per min.

Latent Heat Produced.
2,500 persons × (400 Btu. — 200 Btu.) = 500,000 Btu.
Moisture=500,000/1,000=500 lbs. per hr.
500 lbs.÷2,500=0.20 lb. per person per hr.

Grains Added per Lb. of Air:

$$\frac{500 \text{ lbs.} \times 7{,}000 \text{ gr.}}{16{,}300 \text{ lbs.} \times 60} = 3.57 \text{ gr. per lb.}$$

Air Temperatures:
Outside, 90 F.; Room, 80 F.; Supply Air, 70 F.; Recirc. Air, 80 F.

Published by Automatic Heat and Air Conditioning

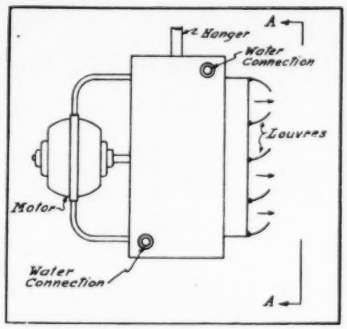


Fig. 10

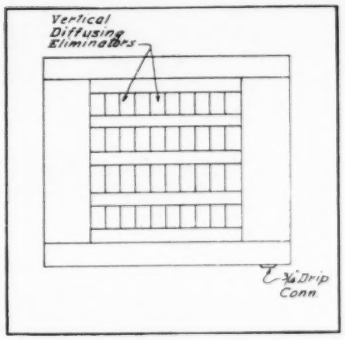


Fig. 11

cooling and dehumidifying the air delivered to the house by the fan, and being automatically controlled so as to be able to maintain the temperature and humidity desired at all times. The piping system generally is specially designed to suit the equipment, which is built primarily for new high class work.

ROOM UNITS

The unit shown in Fig. 5 is another type which employs the air washer idea of spray water; it has a very novel arrangement for a room unit of taking the air in at the top at one side and delivering the treated air out of the top at the other side. It is equipped with a fan, motor, water sprays, pan, eliminators, cooling surface, acoustical treatment for noise and heating surface. This unit when used in conjunction with a refrigeration machine and a cooled water supply will give controlled humidity, air purification and air motion in the summer, including dehumidifying and cooling while, with a proper heat source in winter combined with a tempered water supply, it will heat and humidify. In the summer the air washer section is kept in operation to absorb smells and odors even when cooling is not being done.

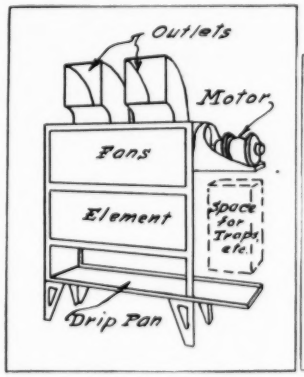


Fig. 12

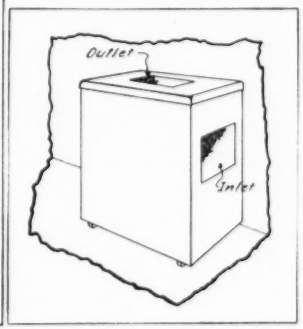


Fig. 13

A urit of entirely different arrangement is shown in Fig. 6 where the fans are placed on the bottom and blow up into the cooling and heating chamber the air being deflected over the coils by V-shaped baffles. Separate heating and cooling elements are used except when the unit is installed for cooling only, in which case the heating element is omitted. This arrangement has the advantage of allowing the heating pipes to be permanently coupled up to the heating element and the refrigeration pipes to the cooling element, the unit always being ready to run either to heat or cool as the weather demands. In this unit the refrigerant is used directly in the cooling coil without the interposing of water in the circuit.

A unit of somewhat simpler design is given in Fig. 7 this unit being for cooling only and employing either water or refrigerant in the cooling coil; it is possible, however, when a year 'round air conditioner is desired to add a heating coil, but no air filter or humidifying function is included.

Another type of unit with the fans placed at the top is illustrated in Fig. 8 and in this type the casing covers the drip pan and all pipe connections and the element is a combination element suited for the circulation of heated or cooled water but not refrigerant direct; no filtering or humidifying is attempted. These units run from 8 in. to 18 in. in depth, 27 in. to 48 in. in width, and 26 in. to 38 in. in height. Ordinarily the casing on the outside is finished with natural wood grain and a very ornamental appearance is obtained.

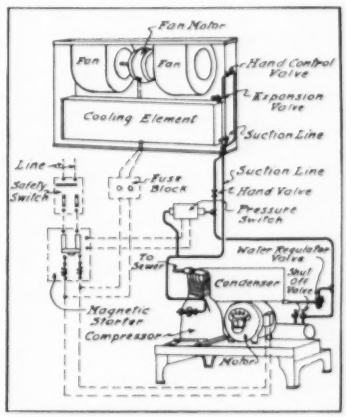


Fig. 14

A unit of somewhat novel construction is given in Fig. 9 where double propeller fans are used and a V-shaped deflector is designed to turn the air flow upward through the cooling element and heating element above, from which the treated air is discharged through a top grille toward the ceiling. The cooling element has the refrigerant F-12 supplied direct

(Continued on Page 134)

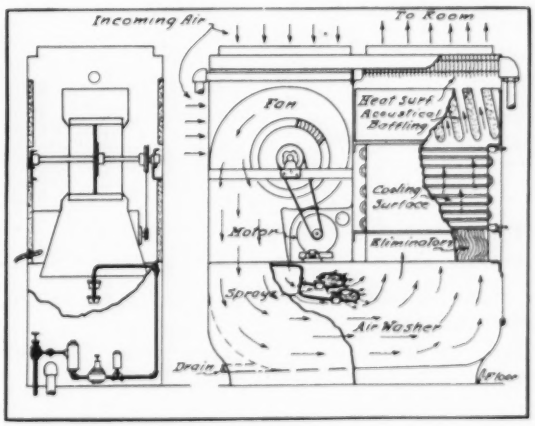
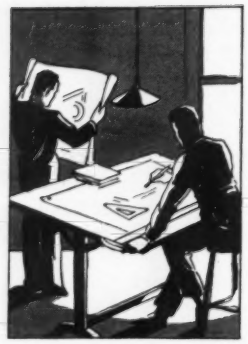


Fig. 15



Questions

Freezing Water Heating Codes

Freezing

- ***Problem is to protect an exposed water line at 25 deg. Fahr. below zero***

To the Editor:

I have a water piping job to install and wish to get some information regarding same.

The building is built near a bridge and the water supply pipe is 50 ft. below the floor level of building. This building is supported by concrete posts and steel frame work only; in other words there is no enclosure below the floor level. I wish to install a water line and shut off rod from the ground level to the floor level which is about 50 ft. I intend to follow a concrete pillar to the floor which is also concrete. The pipe is easy to install but my question is: Can this water line be installed so that it will not freeze at 25 deg. Fahr. below zero? This piping has been installed several times and covered with pipe covering and shiplap but continues to freeze and break.

If you can help me with any suggestions or known methods so that I may guarantee the job I shall appreciate it.

Illinois. B. B. C.

To the Reader:

Yes, the line can be kept from freezing by several methods. No amount of covering placed on the outside of the pipe will prevent the heat in the water radiating to the outside air when it is 25 deg. Fahr. below zero and the water is above 32 deg. Fahr. or a temperature difference of over 57 degrees between the water and the air. That is, of course, if the water is allowed to lie in the pipe a sufficient length of time for the heat to transmit through the covering, such as all night.

About the only satisfactory means of insuring such a line against freezing is to enclose it by some means and supply heat to prevent the water going below 32 deg. Fahr. This usually is accomplished by running a steam pipe along the side of the water pipe and placing a common pipe covering of sufficient inside diameter around both lines, after which the covering is encased to protect it from weather and damage.

This steam pipe is dripped at the bottom in a manhole through a thermostatic trap or the end may be left open and a valve at the top of the steam pipe may be cracked so as to allow a small flow of steam which condenses on the way down and runs out of an open end at the bottom. Some means has to be found for disposing of this small amount of water at the bottom usually by dumping it into a drywell connected into the manhole below frost level and packing the manhole with manure.

Another means is to run a 4 in. flue parallel to the water pipe, covering same as above, with the top open into the building, and to place a heater at the bottom so that the heat will follow up the flue and be discharged into the building. This heater may be thermostatically controlled so as to come on only when the outside temperature goes below freezing.

Water Heating

- ***Inquiry concerns best hook-up to use for nineteen room house.***

The sketch enclosed, Fig. 1, shows the domestic water heating arrangement for a nineteen room house

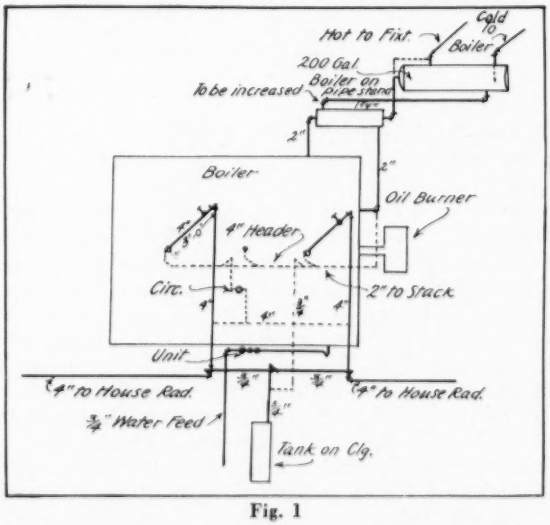
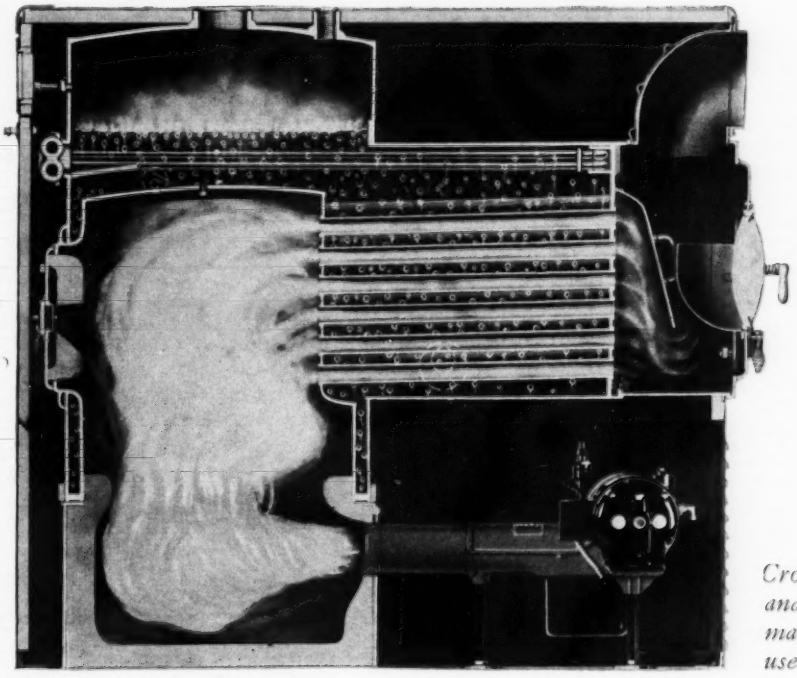


Fig. 1

with eight baths. A hot water heating boiler is used to supply the summer domestic hot water by means of an indirect heater and a 200 gal. hot water tank from

The only Oil Burner . . . selected by Jordan, Marsh for their 7 model homes



THE STREAMLINED SILENT GLOW

Cross section of Silent Glow oil burner and Fitzgibbons Oil-Eighty Automatic steel boiler — the equipment used in all the Jordan, Marsh houses.

Here's one of the biggest news stories of the year. Because it shows the kind of oil burning equipment selected by important buyers—people who investigate thoroughly—who think in terms of the best and most modern.

Jordan, Marsh & Co. is Boston's largest and best known department store. Several months ago they decided to erect seven completely furnished model homes. *And they selected the Streamlined Silent Glow for every house.*

There's a moral to this for dealers who have the vision to plan *tomorrow's* business in terms of the burner that is going to sell *tomorrow*. Everywhere the tide of popular favor is carrying Silent Glow sales to new highs. And for good engineering reasons.

The new "inside-streamlined" Silent Glow brings to oil heating the basic advantage of streamlined aeroplanes, trains and automobiles. *It makes fuel dollars go further.*

Whereas ordinary oil burners force air through a series of noise-creating obstacles, the streamlined Silent Glow whirls the air along in smooth, rhythmic circles. This means a 69% greater flame travel—better combustion—more heat from less oil. Also, it makes Silent Glow so quiet you can hear a watch tick when standing right beside it.

If you are one of the men who can see the difference between the burner of tomorrow and a "has been," it will pay you to mail the coupon today.

SILENT GLOW OIL BURNER CORPORATION HARTFORD, CONNECTICUT
BRANCHES: BOSTON, CHICAGO

Silent Glow Oil Burner Corp.
Hartford, Conn. (DE12)

Please rush full facts on the Streamlined Silent Glow.

Name .....

Street .....

City ..... State .....

which the hot water is carried to the fixtures. The solid lines in the sketch indicate the installation as it is at present and the dotted lines the changes I propose to make.

What I would like to know is what is the best hook-up to use in order to insure the owner a satisfactory job.

Connecticut. L. W. G.

To the Reader:

If you had told us how many persons were to be supplied with hot water we could make a good deal better analysis of your requirements; as it is now we do not know if there are several persons using each bathroom or whether the bathrooms are private and serve only one person each. It might be fair to assume that with a nineteen room house at least ten of the rooms would be bedrooms and that the occupancy might be about fifteen persons. On this basis the water required to be heated per day would approximate 600 gal., and the peak hour load would be around 60 gal. On the basis assumed the storage tank is amply large and it would seem that the trouble must be with the indirect heater. This heater should be large enough to heat the 200 gal. tank in a period of three hours and if it has this capacity it should prove adequate.

From your sketch it seems plain that you have in mind the installation of a circulator on the indirect heater and this is a very unusual procedure, especially when the lines between the indirect heater and the boiler are 2 in., and between the indirect heater and the tank only 1¼ in. If you install an adequate size of indirect heater, or if the one now installed is of adequate size, no circulator is needed on this portion of the installation.

Ideas for correcting this may be expressed as follows: In a house with eight baths the domestic hot water system should be a circulating system using a circulator when desired or found necessary; the hot water boiler should be controlled from a room thermostat so as to start the oil burner whenever the rooms get below temperature and also by an aquastat so that the boiler water will never go below 160 deg. Fahr. Also the

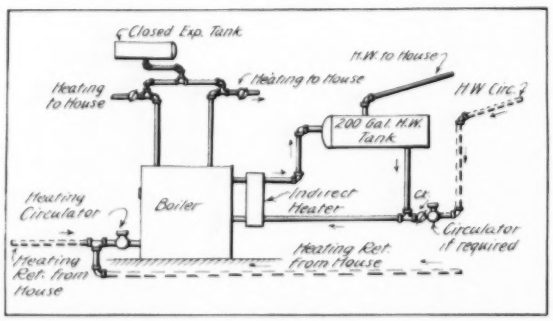


Fig. 2

radiator water should be circulated through weighted check valves by a circulator also connected up with the room thermostat so that water will be circulated to the radiators only when the rooms require heat.

Another method used is to control the boiler temperature from the boiler aquastat only, carrying about 200 deg. Fahr. on the boiler at all times and using the room thermostat to control the circulator to the radiators, with the balance of the installation the same as before.

In this case two circulators would be used, one for the radiators during the winter period only, and the other for the domestic hot water during the entire year if a satisfactory circulation by gravity cannot be obtained in these lines. See Fig. 2.

Codes

- ***Question is whether or not code requires payment of fee on alteration job***

To the Editor:

Will you please express your opinion as to whether or not a fee for plans should be paid as per the following excerpts from our Code. There were no plans on file.

Alterations

That before any alterations are made to any old drainage system or any fixtures added to same, a permit must be first obtained from the Board of Health and a fee of fifty cents (50c) must be paid for each and every fixture added thereto. If no plan is on file, a new plan must be filed by the plumber making the alterations and charged as above stated.

Article 14

Renewal of Fixtures

Sec. 1. When old fixtures are removed, to replace them with new ones for the same purpose, application must be made on the regular forms and signed by the owner, to do said work. There will be no fee for this permit if there is no alteration in the system of drainage and venting. S. W. J.

New Jersey.

To the Reader:

Your first excerpt points out very definitely that before any alterations are made to any old drainage system, a permit must be first obtained from the Board of Health and a fee of 50 cents must be paid for each and every fixture added thereto.

In the first place, we are led to believe that the 50 cents fee is a fixture fee which must be paid for fixtures added to a plumbing system. This can be interpreted as meaning that if a new bathroom is installed and tied into the old plumbing system, a fee of 50 cents is required for each new fixture.

Article 14, section 1, leads one to believe that if an old fixture is taken out and if the system is altered to accommodate a new fixture, then the 50 cents fee must be paid. Our interpretation of the implied meaning of article 14, section 1, is that since you removed the old bathtub and made an extension of about six feet in the drainage line for this tub, which constituted an alteration to the old drainage system, the collection of a fee of 50 cents for this fixture is in order.

We do not know the complete set-up of the plumbing regulations in your city. Neither do we know the reason for the fixture fee in your particular instance. How-

ever, if the fee is for the purpose of defraying inspection costs, the provisions explain themselves quite logically. For instance, the purpose of plumbing regulations is to protect the health of the public and to insure that sanitary plumbing installations are made. If merely an old plumbing fixture is removed and a new one installed without any changes to the original piping, there is little or no possibility of bringing about dangerous health conditions provided the original installation is satisfactory.

However, if there is any change in the piping, even by the amount of the six-foot extension which you installed to accommodate the new tub, there are possibilities that a vent might be disconnected, or a trap might be eliminated with consequent dangers. Under these circumstances, an inspection is vitally necessary, and if the fixture fee is for the purpose of defraying the expense of inspection, then your installation certainly justified the charge of the fee.

It must be recognized, of course, that there may be some points about your ordinances and local conditions of which we have no knowledge and which very possibly would influence our comments.

To the Editor:

I am unable to use words of thanks for your letter in answering my inquiry. I would like to have you understand me more clearly and would thank you again for a further reply.

The code in our city sets forth very clearly that first, before any alterations are made, the plumber about to make the alterations must file a plan. The plumber in the case under discussion failed to comply with this provision.

Now the code also specifies that where there is no plan on file, showing the old work where this alteration is to take place, the plumber shall file one and pay a fee as prescribed in the code, namely two dollars.

If you will please take notice he has violated the code first by not filing a plan, second by refusing to pay a fee of two dollars for the alteration of the bath trap.

This is my contention. Am I right or not? With your reply I will settle the question.

S. W. J.

To the Reader:

Our reply to your earlier inquiry was based on the assumption that there was a question as to whether or not the six-ft. extension of the bath waste and the installation of the built in tub constituted an alteration. According to the parts of your code which you sent us, if it could be classed as an alteration, then your code specifically provides that a permit must be obtained from the Board of Health and that a fee of 50c must be paid for each and every fixture added thereto. Also, if no plan is on file a new plan must be filed by the plumber making the alterations.

In view of all of this, it would seem that your department is justified in demanding the filing of plans covering the alterations involved with its customary attendant features.

Questions for Readers to Answer

October's question aroused exceptional interest, drawing an unusual number of reader answers, almost all of which were essentially correct. The question read:

It is desired to use a house pump delivering 100 g.p.m. against a total head of 90 ft. at 60 per cent efficiency. What is the approximate size of the motor required?

Methods used by readers in arriving at their answers included the application of a number of different formulas, some of which were described as being based on practical experience. The reply of WFB of Louisville was judged the most accurate and complete. The significant part of this answer was that it not only indicated the horsepower required, but it showed the problem carried through to a conclusion, recognizing that the nearest standard motor size of sufficient capacity would be 5 hp.

His answer was derived as follows:

The quantity of water to be pumped (cold water assumed) is 100 g.p.m. The total head is 90 ft. Pump efficiency is 60 per cent.

Since 1 gal. of water weighs 8⅓ lb., 100 gal. will weigh 833 lb. The work required to deliver 833 lb. of water against a head of 90 ft. will be 833 lb. x 90 ft. = 74,970 ft.-lb.

1 hp. (mechanical) = 33,000 ft.-lb. per min. (Note: Mechanical horsepower measures rate of work. One horsepower is taken as the amount of work required to lift one pound 33,000 ft. in one minute or similarly, 33,000 lb., one foot in one minute.)

$$\text{Hp. required} = \frac{\text{ft.-lb. per min. required}}{33{,}000 \times \text{efficiency}}$$

$$= \frac{74{,}970}{33{,}000 \times .6} = 3.785$$

(Note: It will be observed that the pump efficiency is introduced in this formula as the work the pump will do will be equal to only 60 per cent of the horsepower supplied by the motor.)

Owing to the fact that standard motor horsepowers come 3 hp. and 5 hp., the nearest motor of sufficient capacity would be 5 hp.

How Would You Answer This Question?

In the case of a roof consisting of 10,000 sq. ft., if the leaders can be arranged to drain equal areas, how many 4 in. leaders will be required and what should be the size of the main horizontal drainage line if it has a fall of ⅛ in. per foot?

Answers based upon your experience, suitable, will be paid for and published in the February issue.

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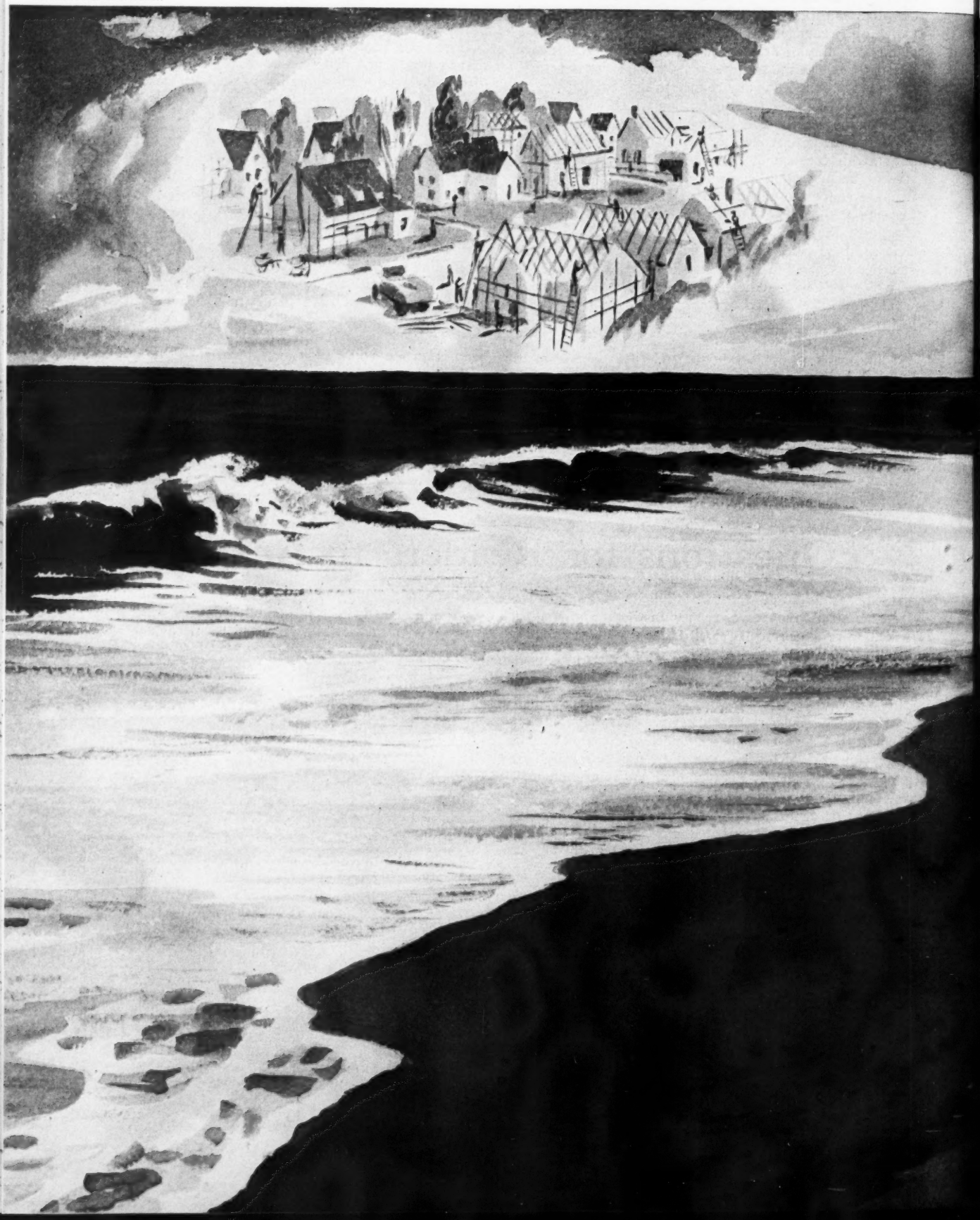


THE TIDE HAS TURNED!

AMERICA is building again...building new homes...modernizing old ones...and we can all rejoice. The tide has turned!

* * *

The turn started in August, 1934, when the National Housing Act provided new ways of financing modernization and new home construction. Since then, there has been a steady increase in building activity. We can rejoice that our government recognized the need for better housing and the wide-spread benefits of the building dollar. It is estimated that 85 cents out of every dollar spent in building is paid out in some form of wages.

* * *

Increased building activity means better business not only for you, but for Merchants, Mechanics, Professional Men...everyone. Every dollar spent in building and modernization does double duty. It increases the property wealth of our country and provides a wide-spread distribution of work and wages.

* * *

Everyone...including the purchaser...benefits by building activity. Yet, no one pays a premium for the benefit. For instance, "Standard" Plumbing Fixtures cost no more than others of comparable design, workmanship and material. Licensed Master Plumbers can furnish "Standard" Plumbing Fixtures on approved FHA terms...no down payment...as little as $10 a month...as long as three years to pay.

* * *

And now that the tide has turned, let's go forward with courage and confidence. Let's build increasing respect for our industry. Let's take the responsibility that is ours, and respond with ability that commands the admiration of all.

* * *

We have consistently maintained that the plumbing business rightfully belongs to you. We have urged the public to buy "Standard" Plumbing Fixtures from you. And we shall continue to work shoulder-to-shoulder with you to keep the plumbing business flowing through you...the Licensed Master Plumbers of the United States.

Henry W. Reed.
President

Standard Sanitary Mfg. Co.
PITTSBURGH, PA.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Business ON PARADE

Index Higher **Metal Markets Firm** **Reports Optimistic**

Up-Swing Continues

- *Vitreous china shipments star as curve* for the industry rises 2.4 points — Residential construction soars 157%*

For the month of September DOMESTIC ENGINEERING'S Composite Curve (base 1934) registered a further increase of 2.4 points. It now stands at 133.2. The up-swing continued with small variations for all items in the field except oil burners which showed a wide variation in the form of an unusual increase.

With improvements of from 10 per cent to 25 per cent in general business, 50 per cent to 100 per cent in new construction, and further increase in FHA modernization work predicted for 1936, there seems to be little question but that the upward trend of the curve will continue.

In the table listing shipments of various plumbing and heating items it is interesting to note that total shipments of porcelain plumbing fixtures in 1935 passed the total for the corresponding period of 1934 for the first time. In addition to porcelain plumbing fixtures, water systems and oil burners also increased their gain over the corresponding months of last year.

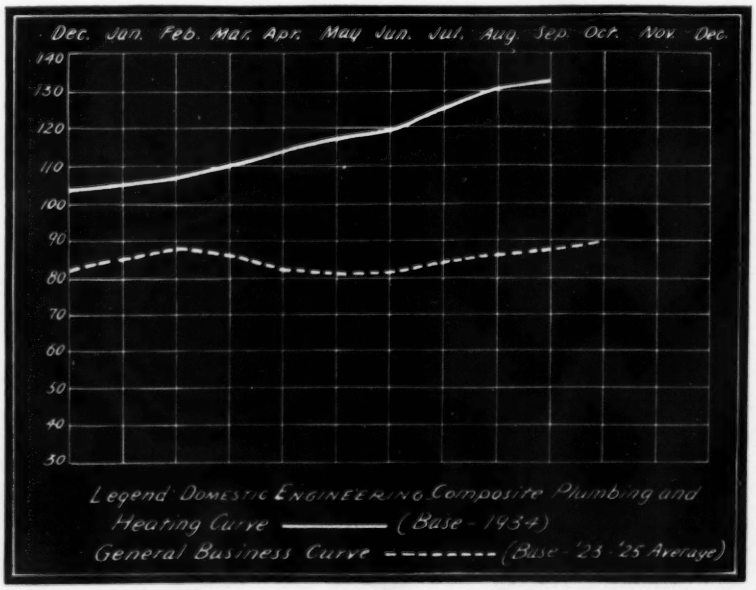
Conditions in various sections as reported by key wholesalers were as follows:

In New England:—Increases ranging from 5 per cent to 15.9 per cent were reported for October over the corresponding month of last year. Increases of 5 per cent to 10.5 per cent over the preceding month were reported—one wholesaler reported a 4 per cent decrease. November is expected to be the same or better in all sections except in Manchester, N. H., where the Amoskeag textile mill is shut down.

In the Middle Atlantic States:—For October increases from 12 per cent to 160 per cent were reported over the corresponding month of last year. One wholesaler reported a 40 per cent decrease but supplemented this fact with the information that October, 1934, had been an unusually good month. In every case except one an increase over September, 1935, was reported. These increases ranged from 12 per cent to 73.2 per cent. The one exception was a 4.5 per cent decrease. Further increases in November are expected by eight wholesalers, the same by four, and a decrease by one. This one wholesaler, however, states that further increases are in sight for future months.

Two wholesalers in this section reported that the recent elections had brought renewed confidence to business men in their sections.

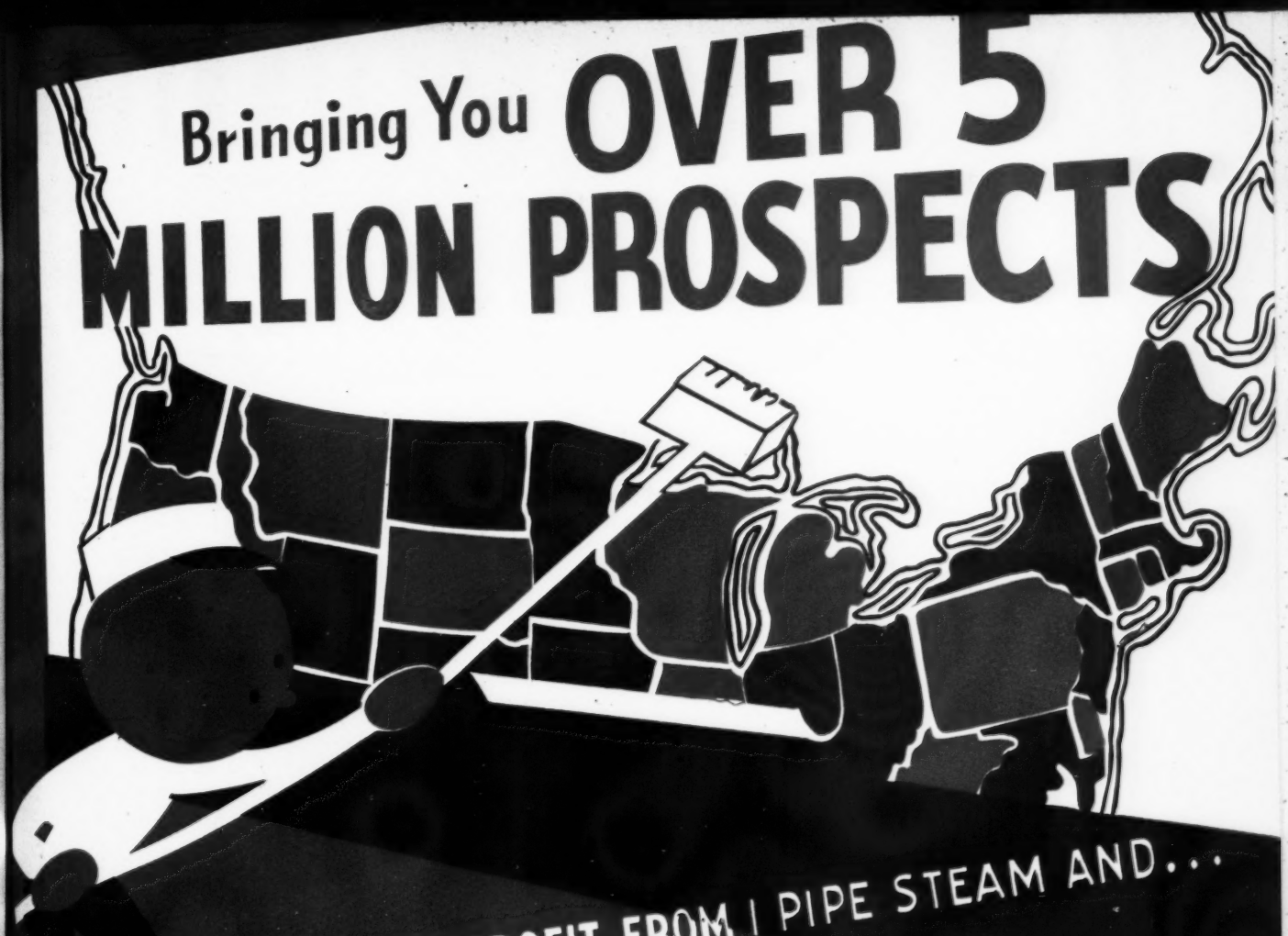
East North Central States:—For October increases of 15 per cent to 41 per cent are reported over the same month last year and increases of 5 per cent to 35 per cent over the previous month this year. Practically all wholesalers in this section expected November to continue about the same although one expects an increase and another a decrease, due to a seasonal decline. A Cleveland firm states that their increase has come principally from new construction in the $12,000 to $35,000 class. This firm goes on to say that low cost projects are not yet under way except as government



These curves show the rates at which business is improving, both in our industry and in general

*This index of business and analysis of current conditions in the plumbing and heating industry, has been developed by the *Marketing and Research Bureau.*

Bringing You **OVER 5 MILLION PROSPECTS**



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DOLE VARI-VENT

Latest Feature of DOLE AIR AND VACUUM **VALVES**

OVER

WAY OVER A MILLION

ONE-PIPE STEAM SYSTEMS

EVERY ONE A LIVE PROSPECT.

These are big numbers—But let us show you . . . The United States Department of Commerce Real Property Inventory reports 1,249,917 steam and vapor heating systems★. A generous estimate might allow that 25% are vapor or two pipe steam. Even after deducting this, the limited survey figures still show 937,438—nearly a million one pipe steam system ★★.

Every One a Logical Buyer of Vari-Vents

The Vari-Vent feature enables you to equalize the steam requirements of near-the-boiler radiators with those hundreds of pipe feet away. With Vari-Vents you can balance any one pipe steam system—give your customers much more comfort and substantial fuel savings. Every one of this million prospects can gain by replacing with Dole Vari-Vents.

Government Figures: Residences with Stove or No Heat—7,246,982

This gives you a rough idea of the prospects that are yours with Vari-Vents . . . because one pipe steam with Vari-Vents is the one logical heating system for these homes—Balanced—Modern—Comfortable—and lowest in initial cost.

But bring the figure down to earth. Cut out entirely the 15 or 16 states where homes don't need much heating. Subtract also the very poor localities where even liberal public financing will not bring a heating plant within the reach of all—and you STILL HAVE more than four million prospects.

Dole Brings Biggest Valve Market Ever!

Sum it up—nearly a million immediate Vari-Vent customers—another four million waiting to be sold the new advantages of one pipe steam with Vari-Vents. Figure down to your own territory where you know the figures in detail: Are you hammering present one pipe steam users to buy Vari-Vent improved performance? Are you carrying the news to stove users that they can enjoy full modern comfort cheaply with one pipe steam? These great markets mean great profits. Stock Vari-Vents. Order from your Jobber. Write us for any information you need. Start now to cash in on these 5,000,000 or more hot prospects.

THE DOLE VALVE COMPANY

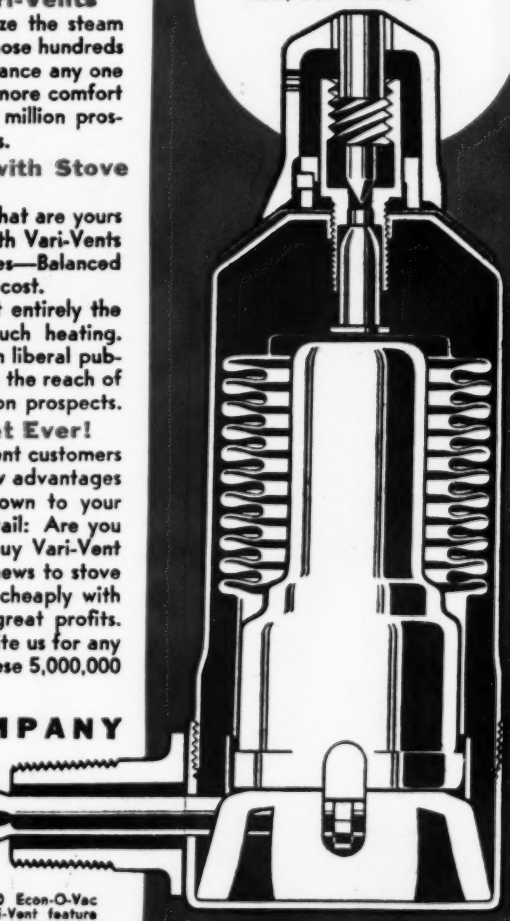
1901-1933 Carroll Ave., Chicago, Ill.

Offices and Representatives in All Principal Cities

★The systems counted were in residential buildings only—therefore not including hotels, hospitals, office buildings, etc.

★Government census covered residences in only 63 selected cities over 2,500 population (not including New York).

The Dole Vari-Vent feature varies the venting—balances the system. Improved performance on all one-pipe systems; especially good under intermittent firing. NoNce in the diagram how the needle valve provides infinite variation from nearly closed to full open, not merely a few fixed steps.



Dole No. 100 Econ-O-Vac with the Vari-Vent feature is illustrated here. In each valve which is available as a Vari-Vent—the remainder of the construction is the identical mechanism whose precision and engineering have won Dole Valves their enviable reputation.

Dole Valves No. 22, No. 100 and No. 2 can be supplied with the Vari-Vent feature—

Dole AIR AND VACUUM VALVES

SHIPMENTS OF PLUMBING AND HEATING ITEMS

	1935 August	1935 September	September 1934	Total 9 Mos. 1935	% Incr. 9 Mos., '35 over 9 Mos., '34
Vitreous China Plumbing Fixtures					
Number of Pieces	295,880	241,678	132,041	2,027,952	124.3
Porcelain Plumbing Fixtures					
Number of Pieces	2,915	3,026	2,198	19,695	4.0
Cast Iron Boilers					
Thousands of Pounds	26,057	38,640	31,466	153,769	13.2
Cast Iron Radiation					
Thousands of ft. of htg. surface	6,470	7,701	6,262	35,436	13.9
Steel Boilers					
Number of Units	735	829	626	5,069	43.4
Domestic Water Systems					
Number of Units	11,060	8,560	5,270	84,493	38.3
Range Boilers					
Number of Units	63,878	66,051	49,003	592,191	47.4
Oil Burners					
Number of Units	17,588	31,311	18,183	104,701	46.5
Mechanical Stokers (for residential apartment and general commercial use)					
Number of Units	5,443	9,574	5,253	27,630	80.9

SEPTEMBER BUILDING PERMITS—45 Most Active Cities

State and City	New Residential Buildings	Families Provided For	New Non-residential Buildings	Total (Including Repairs)
NEW ENGLAND STATES				
Connecticut				
West Hartford	$ 159,000	21	$ 2,550	$ 194,185
Massachusetts				
Newton	130,000	16	4,540	179,355
MIDDLE ATLANTIC STATES				
New Jersey				
Bloomfield	110,000	24	1,400	113,000
Teaneck	214,240	32	2,087	226,407
New York				
New York City				
The Bronx	492,250	140	122,922	907,920
Brooklyn	2,109,350	657	4,418,165	7,432,535
Manhattan	340,000	60	1,803,939	3,908,804
Queens	1,280,500	390	526,616	2,715,004
Yonkers	150,200	25	6,150	193,240
Pennsylvania				
Lower Merion	126,850	12	8,545	145,720
Philadelphia	614,650	112	161,490	1,565,703
EAST NORTH CENTRAL STATES				
Illinois				
Chicago	284,200	46	1,000,138	1,696,304
Wilmette	104,400	10	0	109,400
Indiana				
Indianapolis	146,750	29	90,110	275,208
Michigan				
Detroit	1,029,788	180	578,919	1,945,323
Ohio				
Cincinnati	388,750	62	250,320	758,369
Cleveland	122,000	24	100,770	480,419
Cleveland Heights	129,300	19	6,525	144,760
Shaker Heights	179,500	14	0	185,940
Wisconsin				
Milwaukee	166,900	32	177,392	571,070
WEST NORTH CENTRAL STATES				
Minnesota				
Minneapolis	186,075	44	107,765	443,450
St. Paul	153,420	29	33,401	307,137
Missouri				
Kansas City	229,000	66	2,800	324,277
St. Louis	272,650	72	3,953,217	4,391,759
University City	110,750	22	1,500	112,900
SOUTH ATLANTIC STATES				
District of Columbia				
Washington	1,603,585	443	1,171,005	3,056,656
Florida				
Jacksonville	146,950	56	98,771	324,376
Miami	320,495	97	26,682	470,500
Maryland				
Baltimore	195,000	41	54,400	570,600
West Virginia				
Charleston	131,800	45	4,660	144,970
EAST SOUTH CENTRAL STATES				
Kentucky				
Louisville	155,000	33	72,780	254,548
WEST SOUTH CENTRAL STATES				
Oklahoma				
Oklahoma City	143,000	52	36,280	233,920
Texas				
Austin	110,958	46	470,120	729,215
Dallas	182,125	87	1,076,085	1,347,743
Houston	379,150	109	238,620	677,749
MOUNTAIN STATES				
Colorado				
Denver	287,150	46	61,425	488,145
PACIFIC STATES				
California				
Beverly Hills	235,050	39	132,850	426,700
Glendale	103,300	24	23,390	144,155
Long Beach	105,400	28	227,730	541,467
Los Angeles	1,137,203	326	427,669	2,070,205
Oakland	184,202	42	45,223	364,478
San Diego	143,265	57	80,530	500,014
San Francisco	376,650	116	72,853	628,992
Washington				
Seattle	150,725	30	101,910	342,505
HAWAII				
Honolulu	113,460	62	88,968	262,821

slum clearance projects which mean little to the independent wholesaler.

East South Central States:—In this section wholesalers report increases of 22 per cent to 263 per cent in October over the corresponding month of last year. The changes from the previous month this year ranged from a 24 per cent decrease up to a 12.5 per cent increase. November is expected to be about the same.

West North Central States:—For October increases of from 19 per cent to 70 per cent over the same month last year were reported. Changes from the previous month ranged from none to +28.1 per cent. November was expected to be the same although two wholesalers expect an increase.

West South Central States:—Increases up to 75 per cent for October over the same month last year were reported for this section. The changes from the previous month ranged from none to a 20 per cent increase. November is expected to be about the same as October.

Mountain States:—In this section for October increases of from 41 per cent to 50 per cent over the same month last year were reported. The changes from the previous month ranged from none to a 13 per cent decrease. Although one wholesaler predicts a 30 per cent decline for November, the others expect this month to show a slight improvement. Billings, Montana, reports outstanding progress in residential construction with 123 single family units being built during the first eight months of this year.

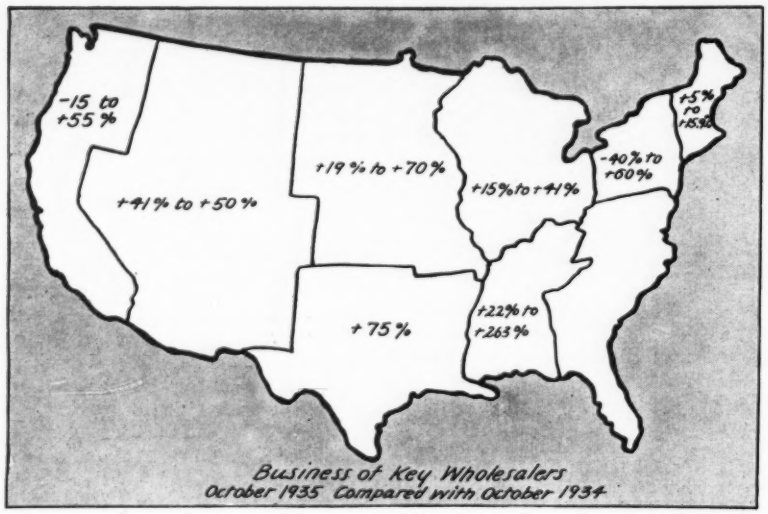
Pacific Coast States:—For October, increases of from 20 per cent to 55 per cent over the corresponding month of last year were reported. One wholesaler reported a 13 per cent decrease. Increases ranging from 12 per cent to 37 per cent over the previous month were reported while one firm showed a 4.5 per cent decrease. Most wholesalers expect November to be better although one expects it to be about the same and one expects a decrease. A southern California firm complained of low prices.

AIR CONDITIONING

44 utilities reported 1,764 air conditioning installations made on their power lines during the first 10 months of 1935. This compares with 1,371 installations during the entire year of 1934. The usual seasonal decline was registered for October.

OIL BURNERS

During September oil burner shipments showed an increase of 72.6 per cent over the same month last year.



Here is a new chart to give at a glance conditions in various sections of the country

This was sufficient to put the ten months increase at 46.5 per cent over the corresponding total last year as compared with 37.5 per cent gain at end of August.

October permits as issued in 47 cities were 5,611 as compared with 4,820 in September, an increase of 16.4 per cent. Since these two months are normally about the same this is an unusual increase.

STOKERS

Class 1, 2, and 3 stoker shipments in September were 9,574 units as compared with 5,253 during the same month last year, an increase of 82.2 per cent. This brought the nine months increase to 80.9 per cent over the same period last year.

Stoker permits as issued in 21 cities were 568 in October as compared with 475 in September, an increase of 19.6 per cent. Although October is normally the peak month for stoker installations this is larger than the expected increase. Stoker permits usually are issued only on the larger installations.

RESIDENTIAL GAIN 157.5%

The Department of Labor reports that due partly to seasonal influences and partly to the shorter month, building construction activity as evidenced by the number and value of building permits issued in 770 cities of 10,000 population or over tapered off in September. Reports from the principal cities in the United States indicate that the value of all types of construction for which permits were issued during the month totaled $74,553,000, as against $88,585,000 in August. This represents a decrease of 15.8 per cent.

Although falling somewhat short of the August peak, the September rate of building activity was still far above the level of a year ago. Measured by the value of permits issued, building construction in September showed an increase of 88 per cent over the corresponding month of last year. The greatest improvement in comparison with September, 1934, was in residential building. For construction of this type the value of permits issued during the month was more than two and a half times as great as in the same month of the year preceding.

The third quarter of 1935 closed with the building construction industry showing an increase of 62.5 per cent over the corresponding months of last year, the cumulative value of buildings for which permits were issued during the nine months amounting to $587,000,000 as against $361,000,000 in 1934. At the same time, value of residential buildings for which permits were issued rose from $76,683,000 during first nine months of 1934 to $197,494,000 in same 1935 period, a 157.5 per cent gain.

Architects Lose Most

In a recent discussion of the effect of the depression on the building industry, one writer has solected the architect as being the greatest loser. He felt architecture as a profession would disappear unless some steps are taken to reverse the trend of the last few years. This authority sets up two kinds of builders, the owner-builder and the non-owner-builder. The former, according to this writer, should be restricted by law since he short-circuits the architect and works toward the cheapest kind of job.

Metal Markets

(Prices as of December 2, 1935)

New Metal Market—Domestic—Firm, Foreign—Firm.

Electrolytic Copper—9¼c, 9⅜c delivered Middle West.

Lead—$4.35, St. Louis.

Lead—$4.50, New York.

Ingot—5 lb.—$4.85, St. Louis.

Zinc—$4.85, St. Louis.

Tin—$52.00, New York .

Brass Ingot—85/5/5/5—9c delivered.

Yellow Ingot—68/1/2/29—7¼c delivered.

Scrap Metal (Dealers Buying Prices)—easier.

Composition and Steam Brass—$5.55 cwt.

Strictly Heavy Yellow Brass Scrap, Cast—$4.10 cwt.

Mixed, Strictly Cocks and Faucets—$4.85 cwt. (Inc. ball cocks, etc.)

Light Brass, Tubes, Pipe, Old Sheets, etc.—$3.50 cwt.

Old Scrap Lead Pipe, etc.—$3.40 cwt.

Copper, Sheathing and Roofing free of nails—$5.65 cwt.

Copper, Boiler, Tanks and other light materials—$5.80 cwt.

Soldered Joints—$7.50 cwt.

Block Tin—$42.00 cwt.

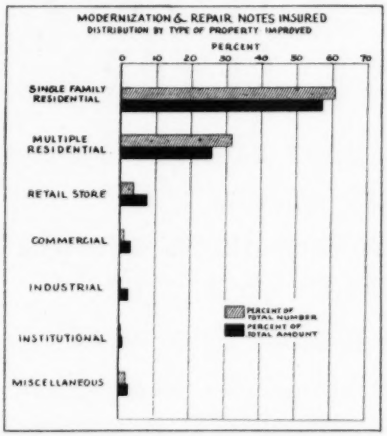
ESTIMATED COST OF BUILDING CONSTRUCTION IN 770 IDENTICAL CITIES, AUGUST AND SEPTEMBER, 1935

Geographic Division	New residential buildings (estimated cost)			New nonresidential buildings (estimated cost)			Additions, alterations and repairs (estimated cost)			Total Construction (estimated cost)		
	September 1935	August 1935	Percentage change	September 1935	August 1935	Percentage change	September 1935	August 1935	Percentage change	September 1935	August 1935	Percentage change
All Divisions	$25,797,768	$28,108,199	— 8.2	$28,112,609	$36,293,936	—22.5	$20,642,963	$24,183,276	—14.6	$74,553,340	$88,585,411	—15.8
New England	1,656,946	2,035,932	—18.6	1,538,123	1,886,001	—18.4	1,648,133	2,703,650	—39.0	4,843,202	6,625,583	—26.9
Middle Atlantic	7,531,579	8,261,549	— 8.8	8,363,568	8,576,338	— 2.5	7,143,441	7,216,141	— 1.0	23,038,588	24,054,028	— 4.2
East No. Central	4,818,044	4,248,773	+13.4	4,348,398	4,807,040	— 9.5	3,421,651	3,539,505	— 3.3	12,588,093	12,595,318	— 0.1
West No. Central	1,893,223	2,037,034	— 7.1	4,471,670	863,439	+417.9	1,370,870	1,475,519	— 7.1	7,735,763	4,375,992	+76.8
South Atlantic	3,831,892	3,639,737	+ 5.3	3,953,963	11,325,930	—65.9	2,045,218	3,622,542	—43.5	9,831,073	18,588,209	—47.1
East So. Central	420,160	749,458	—43.9	605,066	1,105,940	—45.3	486,446	713,786	—31.8	1,511,672	2,569,184	—41.2
West So. Central	1,375,897	2,459,876	—44.1	2,416,846	2,647,923	— 8.7	1,386,426	1,275,671	+ 8.7	5,179,169	6,383,470	—18.9
Mountain	646,015	539,003	+19.9	174,415	895,844	—80.5	590,027	844,220	—30.1	1,410,457	2,279,067	—38.1
Pacific	3,624,012	4,136,837	—12.4	2,240,560	4,185,481	—46.5	2,550,751	2,792,242	— 8.6	8,415,323	11,114,560	—24.3

Homes Lead

- *Over half of FHA modernization loans are for residences, report shows*

The bulk of the work being done under the Modernization Credit Plan of the Federal Housing Administration is concentrated on single family residential property, it is disclosed in a recent FHA statement. A breakdown of modernization loans reported during August and September indicates that 57.1 per cent of the total amount of money involved is being spent on this type of property.



Graph showing percentages of FHA modernization loans going into various types of property

Next in line is other residential property, including apartment houses, hotels and similar structures. The amount spent on these is 25.7 per cent of the total. The amount being borrowed for the improvement of retail stores is 7.8 per cent; that for commercial property, 3.4 per cent; for industrial property, 2.5 per cent; and for institutional property, 0.7 per cent. The balance goes to miscellaneous classifications.

Loan Guide

Complete practical information on the most direct and effective methods open to industrial companies for obtaining government loans is given in "A Guide to Applicants for Direct Loans," just issued by the Committee on Direct Loans of the National Conference of Business Paper Editors and the Associated Business Papers, Inc. This guide is a result of a second study on this subject by the committee, and it supplements the committee's report, "What About Direct Loans to Industry?"

"A Guide to Applicants for Direct Loans" differentiates briefly and concisely between the three sources of governmental aid: Reconstruction Finance Corporation, Federal Reserve Banks and Federal Housing Administration. Outlining the legal requirements which must be met in securing such aid, the study indicates what uses borrowed funds may be put to, what costs as to interest rates borrowers must pay, how to route applications to secure the speediest action, what equipment purchases are eligible for loans, and many other questions of vital interest to prospective borrowers.

Canadian Agreement

Is the Canadian trade pact going to mean more business for the plumbing and heating industry in the United States? This is a question which is in the minds of all of us as a result of the recent negotiations in Washington. Leaders in our industry have been approached by DOMESTIC ENGINEERING on this subject. As definite indications, one way or the other, are evidenced, they will be reported in these columns.

Good News

"This autumn has witnessed a steady increase in our heating, plumbing, and air conditioning business."

Chagnard Plumbing and Heating Co., Louisville, Ky.

* * *

"Fluid heat sales for the present season are far ahead of a year ago."

W. F. Brannan, president
Anchor Post Fence Co., Baltimore, Md.

* * *

News Note—"Jardine and Knight Plumbing & Heating Co., formerly located at 914 E. Platt Ave., Colorado Springs, Colo., has moved into a new location in that city where it has a large, attractive showroom, office and workshop."

* * *

"We have just purchased approximately 10,000 sq. ft. of land adjacent to our property. This is for future plant expansion."

Ray G. Whipple, treasurer,
Harvey-Whipple, Inc., Springfield, Mass.

* * *

News Note—"Milwaukee Flush Valve Co., Milwaukee, Wis., has started work on extensive plant alterations which will involve the installation of additional production equipment."

* * *

"Effective Nov. 1 we have taken over an additional building of 2,000 sq. ft. floor space adjoining our present location."

A. H. Freer,
Freer and Smith, Passaic, N. J.

* * *

News Note—"Russell D. Knight, Philadelphia factory representative of many years standing in the plumbing and heating field, on leaving after a Chicago conference with officials of Kainer & Co., stated that a 'marked improvement' had been experienced in sales this year and a substantial increase might reasonably be expected in 1936."

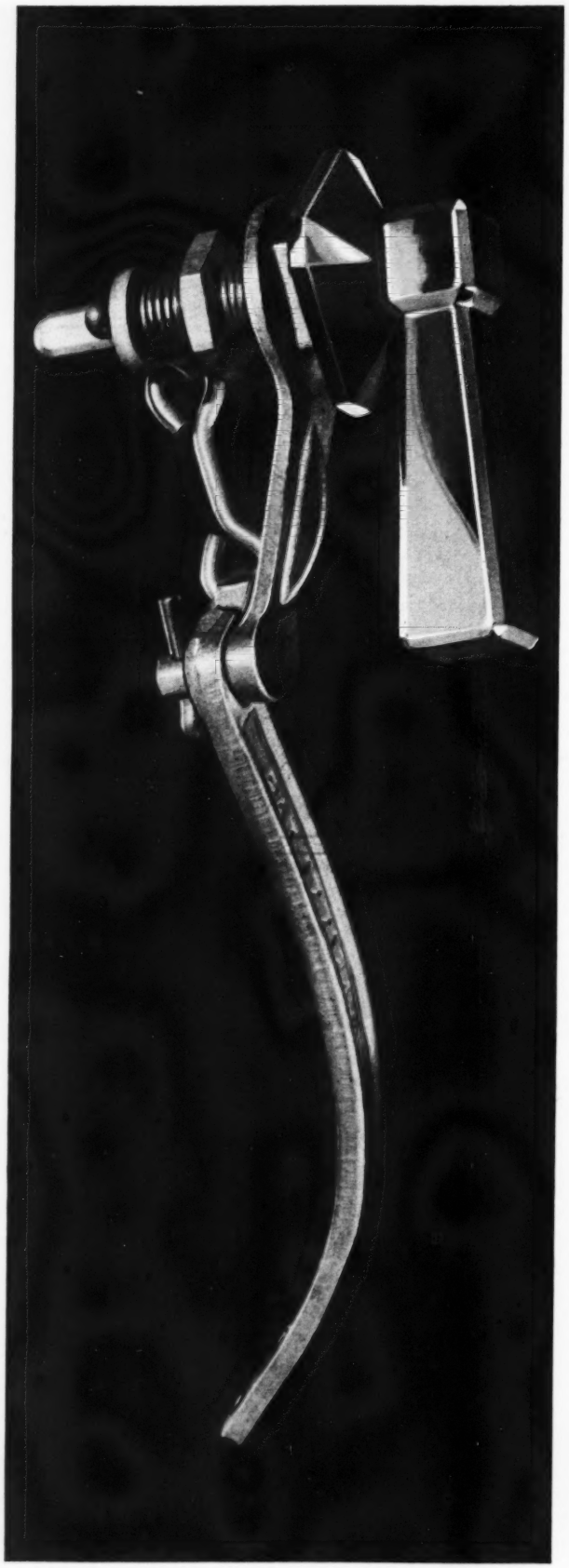
School Market Grows

- *New school construction in 1936, financed by federal funds, will total quarter billion and bring increased equipment demand.*

A huge market for plumbing and heating equipment, which should substantially benefit manufacturers, wholesalers, and contractor-dealers, has been opened through federal allotments for schools made under the four billion dollar Work Relief Program. The volume of new school construction as a result of federal aid to date already totals $465,228,303, according to information supplied by *The American School Board Journal*. Of this amount, the paper reports, 15 per cent has been completed, 30 per cent represents projects under construction, and 55 per cent is now in preparation for construction.

New school construction for 1936, based on the allotment of federal funds already made, is conservatively estimated at $250,000,000. The PWA has set Dec. 15 as the deadline for the starting of these projects.

An analysis of the new financing of school projects under PWA issued by the above mentioned source shows that Pennsylvania and Alabama lead in number of projects with 214 and 273 respectively. Texas and North Carolina follow with 170 and 161. In total cost of projects, however, New York and Pennsylvania are well out in front with $29,862,118 and $29,661,059 respectively. Every State with the exception of Louisiana is included in the list.



COUNT UP THESE FEATURES OF THE NEW M-VB "S" TANK LEVER

1 FULL CAST ARM
2 EASIER ACTION
3 GREATER BEARING SURFACE
4 PATENTED STOP
5 LESS STRAIN AND WEAR

LOOK into the new improved M-VB "S" tank lever if you're on the lookout for a remarkable value with new features that will help you sell. The new "S" lever is provided with a full cast brass arm for longer life. Both the hanger and the link between arm and crank are longer than in the old model. This results in much easier action and the advantages of a greater bearing surface for the arm to revolve on.

A patented construction puts the stop on a direct line with the pull of the crank — so that this type of lever cannot loosen in the tank as readily as those using the old construction.

This great new lever is made to M-VB's famous standards of workmanship and materials. Exceptionally long service life is assured. Its features make it a real bargain at the present price. Ask your jobber for details — and particulars on the whole M-VB line. Or write to the address below for a complete catalog.

M SCOVILL V B

MORENCY-VAN BUREN DIVISION
SCOVILL MANUFACTURING COMPANY
STURGIS • MICHIGAN
A COMPLETE LINE OF CLOSET TANK FITTINGS

Wholesale

News of Men . . . Meetings . . . Companies . . .

What's Ahead in Building?

● *More building, answers Rolland Hamilton of American Radiator in address before business paper editors—States "sound financing" is outstanding need of the industry.*

The answers to the problems confronting the building industry lie to a large extent in the realm of finance, it was stated by Rolland J. Hamilton, president of the American Radiator Co., in a talk made at the "business clinic" of the Associated Business Papers, held Dec. 2 in the Waldorf Astoria, New York City.

Replying to the question, "What's ahead in building?" he said, "The short term answer is 'more building,' because of the shortage of residential accommodations that already exists. The long term answer is not so obvious but is of much greater consequence.

"In the past six years there has been an increase in population of approximately 5,000,000 people, and there have been 5,500,000 marriages," he stated. "During this period the number of new residential accommodations has scarcely sufficed to take care of losses due to fire, depreciation, obsolescence, etc. On the basis of supply and demand as they existed in 1929, therefore, the country is approximately six years underbuilt residentially.

Trend Upward

"The trend of residential building has now been upward for approximately twelve months and at accelerated rates of increase. A study of precedents for over a century reveals that every like situation in the past had presaged a great wave of residential construction. . . .

"Whatever may be our desire for this eventuation the answer is hardly satisfactory if it shall mean just another boom. The years of inactivity have brought to those engaged in building enterprise and to the public, a definite consciousness that these great periodic waves of building activity, as we have known them in the past, are lacking in economic and sociological stability. Cannot these great floods and drouths be better equalized? Why must the provision for shelter, one of the great basic needs of mankind, be without definite planning? Why must financing costs be higher than those of other essentials? Why doesn't building construction progress like other great industries, such as the automobile, to the end that quality be improved and prices lowered? Why must literally a majority of our population live in habitations far beneath their otherwise standards of living and indeed on a basis that would not be tolerated in any other industrial nation? In short, why does not the great mass of American population get better homes and at a price they are able to afford?

"These and other criticisms have projected themselves in recent years when introspection has been at a maximum and activity at a minimum. Some of the questions are not pleasant ones. Try as we may, however, they still confront us and the sooner we meet them head on, the better. . . .

"With full appreciation of the considerable and legitimate differences of opinion," continued Mr. Hamilton, "I an convinced that the answer lies in the realm of finance. Those countries which have applied different financial concepts to building construction — especially homes — have experienced results so far beyond our own accomplishment as to overwhelm small arguments and critical voices. This statement does not condemn those presently engaged in financing enterprise. It does not take away the responsibility of those engaged in building construction or manufacture of materials to find better and more economical materials and methods, but enhances that responsibility and, indeed forces it. The changes I bespeak are in concept and beyond the range of the individual. . . .

"The effects we visualize as flowing from the general term 'sound finance' are rather startling if the term be used

Hamilton Says—

Highlights in the talk of Rolland Hamilton made before "business clinic" of the A. B. P.:

"The country is approximately six years underbuilt residentially."

* * *

"Every like situation in the past has presaged a great wave of residential construction."

* * *

"The lower 30 per cent of our population or approximately 10,000,000 families, according to the 1930 census, could afford an average of but $1¼ a month rent for their habitation."

* * *

"I am convinced that the answer lies in the realm of finance."

* * *

"Securities issued on the homes of the people of other countries have for generations borne low interest rates and have ranked second only to the obligations of the government."

* * *

"The country needs from 750,000 to 1,000,000 new homes annually for an indefinite number of years."

in its broadest sense. Permit me to state sequentially some of the requirements of sound finance and the effects thereof.

"1. Sound finance means lower interest rates for building construction and resultant conditions justifying such lower rates. With the inclusion of first and second mortgages, commissions, renewal fees and miscellaneous charges, the average carrying charge for a term of ten or fifteen years for buildings erected on borrowed money has been at least nine to ten per cent. This has resulted in buildings costing too much with resultant instability of values. It has meant that a residence costing for instance $7,000, has had over that period of years an annual interest carrying charge of say $650 instead of under $400 as in England or France, and thereby the number of families who can afford such a house is largely diminished.

Lower Interest Rates

"2. Lower interest rates mean better buildings. Few investors are careful with respect to speculative projects but they will demand efficiency and stability in those things counted as investment. There will be found those who will lend on a structurally poor building at 10 per cent but not so at a rate of 4½ per cent. . . .

"3. Lower interest rates and an investment status mean research and planning to the end that better buildings be erected at lower costs.

"I am privileged to be a trustee of a foundation, the only one that I know of, given over to the study of ways and means to provide better and cheaper human habitations. The achievements have been only moderate but a bare scratching of the surface opens up a vision of possibilities that is most encouraging. It will not be done easily or overnight, but I confidently predict that open minded and diligent study of materials and methods for home building will demonstrate tremendous potential in increase in livability and decrease in costs.

"4. Sound financing means longer term loans than heretofore with definite periodic amortization. This is the only advanced nation where building loans are made on the basis of short terms and without amortization. . . .

"You are certainly entitled to ask how the concept of real estate and buildings as a sound, low interest rate investment can be made effective. The answer lies in a present and rather amazing coincidence of favorable factors. The country needs from 750,000 to 1,000,000 new homes annually for an indefinite number of years. Public consciousness has been stirred by the intolerable conditions shelter-wise of millions of our families in the lower income ranges. Interest rates are at a low ebb of all time. The pressure of funds seeking investment is unprecedented. Existing governmental agencies have shown the workability of a government sponsored guarantee fund for loans furnished by private capital and the fund maintained as part of the interest carrying charge. Like agencies have shown the feasibility of long term loans on an amortized basis.

Government's Part

"We neither favor nor do we see the need of the Government assuming financial obligations for housing except in the very lower ranges where there is no possibility of private capital earning a return. But it will be necessary, as above indicated, in order to initiate the desired trend, that the Government under existing agencies continue and enlarge its functions as custodian of a mortgage guarantee fund available for soundly built and properly located structures. The Federal Housing Administration has done valiant pioneering. The Home Owners Loan Corporation is in an extremely favorable position to go forward with an equivalent program through the Federal Savings & Loan Associations set up under this agency of the government.

"It is not unreasonable to believe that through the assistance (not money) of either of these agencies, properly built homes could be financed by private capital at a basic interest rate of 4½ per cent with the moderate necessary charges for insurance and service. With this initial stimulant our investor class would in due time realize that the financing of buildings can and should be one of our soundest forms of investments and not a disappointing speculation as has so often proven the case in time past. This happy eventuation is not to be realized in a day or a year but the start can be made now and the worthwhileness of the result may well be the stimulant for our efforts and the reward of our patience."

Bureau Drive

• *A. C. Brown appointed chairman of finance committee—Increased appropriations sought*

John J. Calnan, president of the Plumbing and Heating Industries Bureau, has announced the appointment of a finance committee, consisting of A. C. Brown, president of the Chicago Faucet Co., chairman; C. R. Crane, II, vice president, Crane Co.; Chas. K. Foster, executive vice president, American Radiator Co.; George W. Frank, president, National Assn. of Master Plumbers; John J. Kennedy, vice-president, National Tube Company; Walter J. Kohler, president, Kohler Co.; and J. C. McEwen, president, N. O. Nelson Co.

In commenting on the personnel of the committee, Mr. Calnan said: "After consulting with the Bureau's board of directors, I have placed the responsibility for the raising of funds for the Bureau's work in 1936 in the hands of a strong committee of leaders in the various branches of our industries.

"With improving business conditions, the committee should find it possible to obtain increased support in order that the publicity activities of the Bureau may be correspondingly extended.

"A number of officers of associations have already indicated to me that their subscriptions for 1936 will be increased 100 per cent over their 1935 contributions.

"The committee will ask all associations to increase their subscriptions. Speaking for President Frank of the National Assn. of Master Plumbers, I wish to say that we are not asking other associations to do what we have not already done with respect to our own association."

Stoker Plans

• *Manufacturers, in annual session, adopt comprehensive program—Col. J. R. Whitehead re-elected president*

The reviewing of setting heights standards for stokers, standardization of sizes, and improvement of stoker sales statistics were some of the major projects in the comprehensive program adopted at the eighteenth annual meeting of the Stoker Manufacturers' Assn. held at the Edgewater Beach Hotel, Chicago, Nov. 15 and 16. Because of the broad scope of the program and the difficult problems to be undertaken for investigation and application, it is expected that the program may require several years for completion.

The educational activities of the association will be continued and increased, it was decided at the session, and members of the engineering committee will continue the practice of appearing on the programs at various universities and coal association conventions. The commercial committee of the association reported that it was giving consideration to the publication of a comprehensive catalog featuring the latest improvements and data on stoker firing which can be distributed to engineering students in schools and universities and which can also be used

by coal operators, consulting engineers, architects, retail coal distributors and consumers as a guide in determining the best uses of the various types of stokers manufactured by members of the association.

A review of the Midwest Stoker Assn. setting heights standards for steel boilers was recommended by the engineering committee, headed by T. A. Marsh, Iron Fireman Manufacturing Co., this recommendation receiving the unanimous approval of the association. These standards were approved and adopted by the Stoker Manufacturers' Assn. five years ago. Revised standards will be drawn up in the light of improved practices and five years additional experience in the installation of stokers as well as recent improvements in design and application of underfeed stokers.

Standardization

The association voted unanimously to promote standardization of stoker sizes, both as to coal burning rates and capacities of steam and hot water radiation. Through the association's commercial committee, of which B. O. Fink, Auburn Stoker Corp., Auburn, Ind., is chairman, an attempt will be made to seek improved reports on stoker sales and production on data furnished monthly to the U. S. Department of Commerce, Bureau of Census.

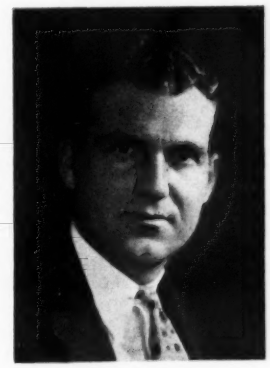
At the closing session of the convention, all officers for the ensuing year were re-elected. These are: Col. J. R. Whitehead, manager, stoker and research divisions, Fairbanks, Morse & Co., president; H. H. Kurtz, manager, Chicago, St. Louis and Milwaukee branches, Iron Fireman Manufacturing Co., treasurer; and Marc G. Bluth, Chicago, secretary. The constitution of the association was completely revised and a new and smaller executive committee created to permit greater flexibility in managing the affairs of the association. Members of the new executive committee are: Col. Whitehead, chairman; Max H. Hurd, vice president, Link-Belt Co.; Henry M. Brooks, president, Hershey-Motorstoker Corp. and Pacific Coast Co.; E. C. Sammons, vice president, Iron Fireman Manufacturing Co.; and L. B. Weller, treasurer, Flynn and Emrich Co.

Water Systems

● *Committee named to study summer cooling by well water*

A special study of the field of cooling and summer air conditioning of homes by means of well water is the chief function of a newly appointed committee which consists of Neil D. Skinner, Crane Co., chairman; George B. Emeny, The Deming Co.; Frank B. Perkins, A. Y. McDonald Mfg. Co.; Mr. Zimmerman, The Duro Co., and Harold Warden, A. D. Cook Co. The further purpose of this committee, which was appointed by F. J. Gould, president of the National Assn. of Domestic and Farm Pumping Equipment and Allied Products Manufacturers, is to prepare data for figuring cooling projects and for selecting the proper equipment.

Impetus has been given to the matter of promoting the sale and installation



Neil D. Skinner

of water supply equipment in connection with air cooling work through recent developments and activities. One factor which might be listed is the stimulation given to electric water systems through the campaign carried on during the past year by the Electric Water Systems Council.

Cleveland Meeting

The occasion of the appointment of the committee mentioned in the foregoing was the meeting of the Water Systems Division of the National Assn. of Domestic and Farm Pumping Equipment and Allied Products Manufacturers on November 15, in Cleveland at the Cleveland Hotel. A number of suggestions were discussed at the meeting. These included promotion plans for the sale of water systems during 1936, particularly in connection with the extension of rural electrification lines. The opinion expressed by many of those in attendance was that with electric current available, rural home owners first would turn their attention to securing the benefits of running water. Those in attendance at the meeting included J. C. Myers, C. D. Leiter, Mr. Taylor, F. E. Myers & Bro. Co., Ashland, Ohio; N. J. Gould, Henry F. Miller, Goulds Pumps, Inc., Seneca Falls, N. Y.; G. R. Deming, The Deming Co., Salem, Ohio; Herbert C. Angster, Natl. Assn. Domestic and Farm Pumping Equipment and Allied Products Manufacturers; W. T. Hatmaker, F. H. Arnold, The Duro Co., Dayton, Ohio; Karl M. Brower, H. Rothermell, Dayton Pump & Mfg. Co., Dayton, Ohio; D. V. Stewart, Columbiana Pump Co., Columbiana, Ohio; H. R. Lafferty, Red Jacket Mfg. Co., Davenport, Ia.; F. B. Perkins, A. Y. McDonald Mfg. Co.; and Neil D. Skinner, G. A. Patterson, Crane Co.

New Association

● *Work started by recently organized Assn. of Gas Appliance and Equipment Manufacturers*

The promotion of cooperative relations between manufacturers of gas appliances and equipment and gas utilities, dealers, and customers will be one of the important objects of the new Assn. of Gas Appliance and Equipment Manufacturers which was formed in Chicago Oct. 14, just prior to the annual meeting of the American Gas Assn. This association will be affiliated with the A. G. A. and all of its members will automatically become manufacturer company members of the A. G. A. and will be entitled to all rights and privileges going with this membership.

Included in the purposes of the new A. G. A. E. M. are: the promotion of the use of gas as a fuel; promotion of cooperation among its members for proper use and increased distribution of gas and gas appliances and equipment; establishment and administration of fair trade practice; and conduct of exhibits of products of members.

William T. Rasch, American Gas Products Corporation, New York City, was elected president of the association at its initial meeting. Other officers elected are: Merrill N. Davis, S. R. Dresser Manufacturing Co., Bradford, Pa., vice president; Donald McDonald, American Meter Co., New York City, treasurer.

Accurate Ads

● *Better Business Bureau defines proper use of term "air conditioning"*

Because of the widespread misuse of the term "air conditioning" which has occurred in the advertising and selling of products over the past year or so, the National Better Business Bureau has issued a "guide to the proper use of the term 'air conditioning in advertising'."

The bureau's bulletin points out that "literally, anything which affects the atmosphere within a structure, such as an electric fan, the opening or clos-

Over 700 members and guests enjoyed the tenth annual dinner dance of the Jobbers' Credit Assn., New York City

ing of a window, a heated radiator, a pail of water, smoking, flowers and innumerable other factors 'condition' the air to a certain extent. If there were no industry which offered something which it sold to the public as 'air conditioning,' there might be no objection to describing any of these acts or articles as 'air conditioners.'

"But since something called 'air conditioning' is being advertised and sold to the public, it is in the interest of both fair competition and the public that there be a mutual understanding of what this term means. For this reason the National Better Business Bureau has made a careful inquiry into the subject. . . We find agreement among the manufacturing industry, architects and heating and ventilating engineers that 'air conditioning,' generally speaking, is the scientific preparation and simultaneous control of the atmosphere within a structure. The atmosphere is affected by such factors as temperature, humidity, motion, distribution, dust, bacteria, toxic gases and ionization. The three factors which probably affect human comfort to the greatest degree are temperature, humidity and motion of the air. It is the simultaneous control of these three factors which scientific authorities agree constitutes the minimum requirements for air conditioning. . . .

"Summer air conditioning," the bureau points out, "should perform as a minimum the following functions: (1) cool the air; (2) dehumidify the air; and (3) circulate the air. Winter air conditioning should: (1) heat the air; (2) humidify the air; and (3) circulate the air. Year around air conditioning should: (1) cool and dehumidify the air in summer; (2) heat and humidify the air in winter; and (3) circulate the air. It is understood that the functions required by the season of the year are performed automatically and simultaneously to meet the specific minimum requirements of the user.

"The bureau requests the cooperation of all interested in fair advertising in eliminating the use of the term 'air conditioning' or 'air conditioner' or 'air conditioned' to describe such articles as fans, humidifiers, odor absorbers, underwear, hats, etc. Loose terminology of this nature may not necessarily deceive the public but it paves the way for the offering of air conditioning equipment which does not perform the minimum functions of air conditioning as generally understood by the trade. . ."

Dinner Dance

- *Brilliant annual New York social affair, sponsored by Jobbers' Credit association, enjoyed by over 700*

Always noted as one of the outstanding social affairs of the season, the tenth annual dinner and dance of the Jobbers Credit Assn. held on Nov. 16 at Hotel Commodore, New York City, amply justified its reputation.

Well over 700 members and guests were present, a very large gain over last year, and in their ranks were a great majority of the wholesale and manufacturers' representatives in the New York metropolitan district.

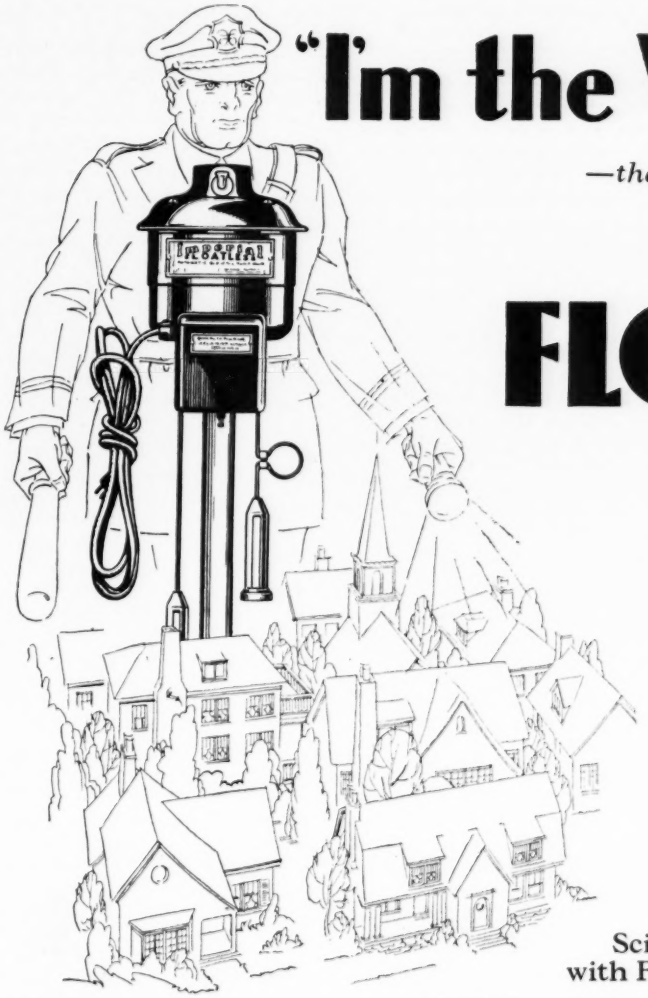
The officers and committeemen spared no pains to make this year's event one of the most memorable of any ever held by the association. A wonderful dinner, dancing to the tunes of an excellent orchestra and an outstanding floor show contributed to everyone's enjoyent. Among the entertainers were a number of N. B. C. radio artists. One of the features of the evening was a big review, "Broadway Frolics of 1935," which included acts from many of the leading night clubs.

N. E. "Turkey Shoot"

The officers of the Heating Trades Golf Association of New England introduced an innovation at the annual "Turkey Shoot" of that organization which was held at the Winchester Country Club, Winchester, Mass., on Nov. 5. When the fifty who had played Winchester's long and trap-studded course had finished the excellent turkey dinner, it was announced by President A. A. Klonower that those who had had the most difficulty in scoring were going to be rewarded. Instead of the usual method of taking a player's handicap from his gross score, the committee added gross scores and handicaps, and as a result, the men with the high scores were the victors.

Edward F. Dunn, Crane Co., proved that he is the best handicap match play golfer in the association during the year, trimming John G. Rose, Republic Steel Corporation, in the finals of the competition and winning possession for one year of the handsome trophy which must be earned three times for permanent possession. Mr. Dunn was given a beautiful, suitably inscribed replica of the cup to retain permanently and "Runner-up" Ross was given a smaller replica to remember his skill in reaching the final round.

Three members of the association, Clinton G. Bostwick, Herbert N. Dawes



"I'm the Watchman-

—the unfailing protector
against cellar-seepage
and basement-floods—

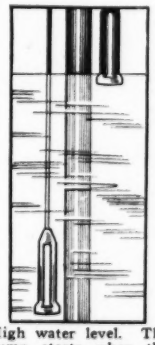
FLOATLESS SUMP PUMP ACTION"

THE best guarantee against damp or flooded cellars is the Imperial Floatless Sump Pump. This is the one design in which sand and sediment in the water cannot interfere with level control.

Frequent stoppages and defective operation, due to clogged float-action, are now at an end. Whenever the water reaches a predetermined level in the pit, ***the pump is sure to start operating at once.***

Scientific Accuracy with Floatless Control

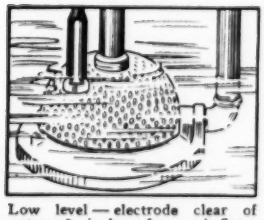
In the Imperial design, *no float is used.* Instead, two hanging electrodes start and stop the motor at the desired water-levels. When the water reaches the higher electrode, it closes a circuit, and the motor runs till the lower electrode is out of water.



High water level. The pump starts when the water reaches the upper electrode.

The Lowest Possible Pump-Down Simplified Cleansing

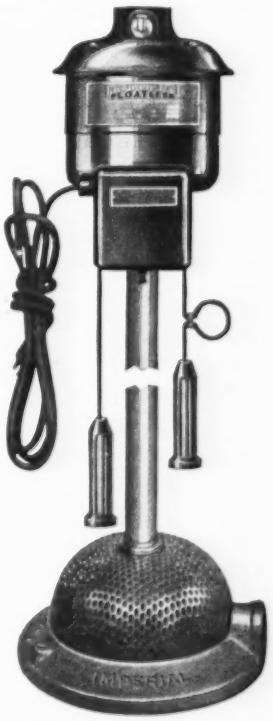
By avoiding the restrictions of float-control, an extra-low pump-down is obtained—3 inches from the pit-floor. Pumping can even be continued below this level by using a special switch. Also, the strainer is far easier to clean; there is nothing to prevent raising it to the top of the shaft for this purpose.



Low level — electrode clear of water—3 inches from pit-floor.

Longest-Lived of All

A prime factor toward long life is the accurate balance of the impeller (a forging, and practically wearproof; this is an exclusive feature). All-bronze (rustless) construction, floating shaft suspension, and unfailing circuit-breaker action add greatly to durability and prolonged service.



Made in 6 models for all sump depths

$39.50 UP

Order from your jobber Write also for details to

IMPERIAL BRASS MFG. CO.

1200-31 West Harrison St. **CHICAGO**

and J. Frank Tuttle, who are also members of the Winchester Country Club, acted as hosts of the day and the association provided professional entertainment to round out the evening's enjoyment.

Prize Winner

Shown below is P. A. Edwards, winner of the grand prize of $200 in cash given by the Modine Manufacturing Co. for the best solution offered in this company's unit heater layout contest, who appears very happy indeed to accept a check for the prize money from P. F. Moser, Pittsburgh representative of the Modine company.

Mr. Edwards who is associated with G. F. Higgins Co., heating contractors, Pittsburgh, Pa., has had unusually broad experience in the heating and ventilating field, it is disclosed. His technical training was at Carnegie Institute of Technology, from which he was graduated in 1912. He started in the heating business in 1906 and formed his present connection in 1909. Since then he has designed heating and ventilating systems for many types of public buildings in various sections of the country.

One of his notable accomplishments was his work on the heating system and power plant of Duquesne University which was designed and installed by his firm. This job presented some unusual problems, as the building occupied four city blocks and it was necessary to construct tunnels under three streets. At present Mr. Edwards is engaged with his firm in the installation of the heating system for the Cathedral.

Prize winner gets his reward. P. A. Edwards accepts check from P. F. Moser of the Modine company

Mr. Edwards has been a member of the American Society of Heating and Ventilating Engineers since 1919 and is a past president of the Pittsburgh chapter. He is now delivering a series of weekly talks to the heating and ventilating classes at the Carnegie Institute of Technology.

The Modine contest aroused exceptional interest among heating men. The problem was to determine how best to heat a one-story bus garage, selecting the proper models of Modine steam-type unit heaters, correctly locating them on a plan shown, and giving the reasons for such selection and location. Heat loss was given, and it was also unnecessary to figure piping and fitting.

Charter Members' Day

The last meeting of the year of the New England Metal Products Golf Association, was held at the Wollaston Golf Club, Montclair, Mass., on October 24. It was charter members' day and the largest turnout of the year was on hand. Among the original members of the association present were: Robert E. Sargent, William H. Thayer, John S. Nicholl, and D. William Wade.

Robert E. Sargent, as spokesman for the charter members, told of the early foundation of the association in 1917, and how it has grown in strength and prestige. The original membership was 25, and is now limited to 50.

Present at the dinner were past presidents E. B. Lane, Robert E. Sargent and M. W. Dennison, all of whom made very appropriate remarks on this occasion.

In the morning there were three special contests: driving, putting and approaching, which were won by E. H. R. Revere, Edward Corcoran, and Frank Johnson, respectively.

Eighteen holes of golf were played in the afternoon, and at the dinner in the evening, turkeys were given as prizes to the winners, who were as follows:

	Gross	Hdcp.	Net
1. Stanley G. Cady	87	18	69
2. George Egan	75	4	71
3. L. G. Gelshenen	97	24	73
4. W. S. Earle	89	15	74
5. John Cronin	96	21	75
6. James Mullen	99	23	76
7. James H. Carr	105	27	78

Five were tied for eighth place, these being:

	Gross	Hdcp.	Net
8. George Elliott	102	21	81
Roger W. Pope	99	18	81
Arnold Abbott	97	16	81
F. A. Monroe	92	11	81
W. H. Taylor	91	10	81

Each of the charter members present at the dinner also was awarded a turkey.

After the dinner was over, Harry G. Starr showed moving pictures of the members of the association, as taken at various golf meetings. They were most interesting, and greatly appreciated.

Oil Burner Show

The twelfth National Oil Burner Show will be held at Convention Hall, Detroit, Mich., April 14-18, it has been announced by G. Harvey Porter, managing director of the Oil Burner Institute. Exhibitors will include burner manufacturers, accessory manufacturers, oil companies, and other related displays.

Official seal adopted by Oil Burner Institute

In connection with the show the Oil Burner Institute will hold its annual convention. At a recent meeting of this organization a comprehensive program was adopted to increase public "demand for all burning appliances through promoting an increasing acceptance of oil as a fuel." At this session it also adopted an official O. B. I. seal, shown herewith, which is for the use of the members of the Institute and for their equipment and for all advertising purposes.

Fair Play

Recognizing that the present upswing in business calls for the exercise of a definite policy of fair play, the directors of the Northern California Plumbing and Heating Wholesalers Association, Inc., of San Francisco, have promulgated a declaration of such belief. In this work they were assisted by Secretary-Manager J. E. Heaslett and the association's attorney, E. R. Roerchner, The declaration was prepared and presented to the membership Nov. 15, being concurred in virtually 100 per cent, although blank forms have been only recently released.

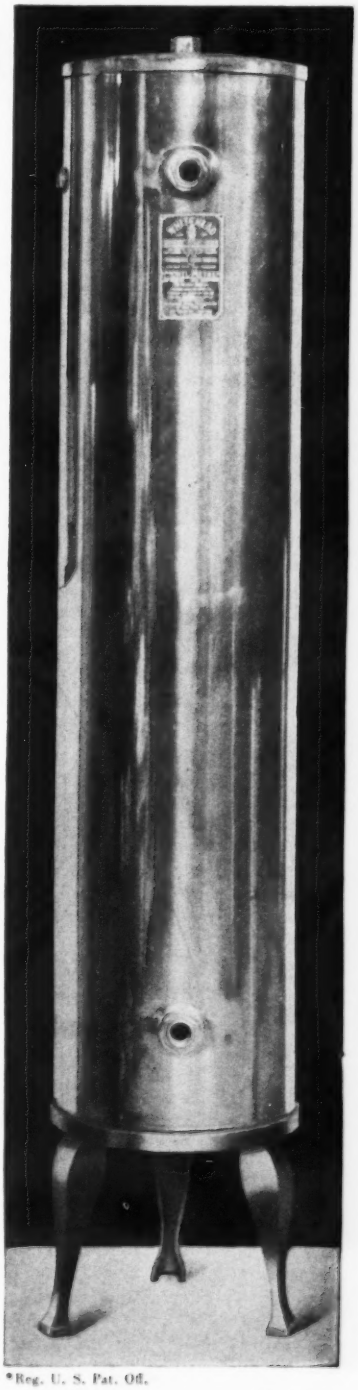
The California Unfair Practices Act, vitally amended during the past few months, is taken as the basis of the wholesalers' declaration. The purpose of the Act, as set forth in section 13, is " . . . to safeguard the public against the creation or perpetuation of monopolies and to foster and encourage competition, by prohibiting unfair and discriminatory practices by which fair and honest competition is destroyed or prevented. This act shall be literally construed that its beneficial purposes may be subserved."

The injunctive measures, or "teeth," are contained in section 8 of the Act, which provides that "Upon the third violation . . . the court must enjoin said corporation or individual from doing business in this State permanently, or for such time as the court shall order."

1001 MASTER PLUMBERS

. . . know the answers to these 8 Questions

Do You?



Question: What national distributor and manufacturer offers you the only line of range boilers made of a material that cannot be purchased through mail order houses?

Answer: The makers of Monel Metal Tanks, the Whitehead* Metal Products Company of New York, Inc., 304 Hudson St., New York, N. Y.

Q: Do Monel Metal Tanks rust?

A: No. Monel Metal is an alloy of two-thirds Nickel and one-third copper and is absolutely immune to rust.

Q: In what test pressures are these boilers available?

A: 200 pounds, 250 pounds, 350 pounds, hydrostatic pressure test per square inch.

Q: Are they guaranteed?

A: Yes—for twenty years—in writing.

Q: In what capacities are they available from stock?

A: 25, 30, 40, 50, 60, 80, 100 gallons. Larger capacities on special order.

Q: With what other material used for range boilers are they competitive in price?

A: With copper boilers.

Q: Are Monel Metal tanks available in water heaters?

A: Yes—in the Whitehead Automatic Storage Water Heater.

Q: Is there a catalogue describing the complete line of Monel Metal Tanks and Whitehead Automatic Storage Water Heaters?

A: Yes—and it's yours for the asking. Write, right now, to The Whitehead Metal Products Company of New York, Inc., 304 Hudson Street, New York, N. Y.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

*Reg. U. S. Pat. Off.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL METAL

Monel Metal

Directors of the Northern California Plumbing and Heating Wholesalers Association, Inc., are: president, Donald O'Hair, P. E. O'Hair & Co.; first vice president, F. F. Elliott, Crane Company; second vice president, Hugh Oliphant, Tay-Holbrook, Inc.; Fred Chittenden, Walworth California Co.; J. I. Winzler, Federal Pipe & Supply Co.; J. D. Fleming, Grinnell Company of the Pacific, and Ralph P. Olsen, Olsen & Heffernan. Association headquarters are at 785 Market St., San Francisco.

Crane Ad Manager

H. H. Simmons, advertising agency executive and former business paper man, took up the responsibilities of advertising manager of the Crane Co., effective Nov. 15. In the company's announcement of the appointment it is stated that Mr. Simmons will develop the advertising service so that it can be fitted into the general sales promotional program in cooperation with other aids to selling, such as exhibits, dealer service, special campaigns, and sales training.

In taking up his new work, Mr. Simmons terminated a nine year association with Russell T. Gray, Inc., Chicago advertising agency, of which he has been vice president and account executive.

Broad training in advertising, particularly in the industrial field, marks Mr. Simmons' qualifications. After

H. H. Simmons

graduating from the University of Illinois in civil enginering, he spent the first years of his business life in the trade publication field, serving successively as associate editor, advertising representative and business manager. His more recent activity has been in the advertising agency field, both on general accounts and in specialized service to industrial advertisers. Among the markets which he has had an opportunity to study intensively are power plant, oil and gas, railroad, chemical, food, municipal, and construction.

Wilson of G. E.

Charles E. Wilson, vice president in charge of the merchandise department of the General Electric Co., has now been assigned responsibility for the direction of all appliance activities of the company, it is stated in an announcement recently made by President Gerard Swope. In taking over these additional duties, Mr. Wilson assumes the work

C. E. Wilson

heretofore directed by T. K. Quinn, who has resigned to become president of Maxon, Inc., an advertising organization of Detroit, Cleveland and New York.

In his new position Mr. Wilson will divide his time between the Bridgeport and the New York offices of the company.

Mr. Quinn will continue to be connected with the company on a retainer basis to asist in questions concerning public relations and sales promotion.

Camden

At a special meeting of the board of directors of the Camden Pottery Co., Camden, N. J., Charles C. Wright was elected treasurer and general manager of the company to fill the vacancy caused by the death of Arthur J. Podmore. At the same meeting Stanley S. Backer was elected a director and secretary of the company.

Mr. Wright was formerly secretary of the company and has been connected with the concern for about 30 years. Mr. Backer has represented the Camden company in a sales capacity and has been with the company for fifteen years.

Air Hygiene, Inc.

Air Hygiene Foundation of America, Inc., has been formed by a large group representing various industries, with headquarters at Thackeray Ave. and O'Hara St., Pittsburgh, Pa. The purposes of this organization are to conduct investigations of and to stimulate research on problems in the field of air hygiene and to gather and disseminate factual information on this subject.

A comprehensive investigation has been begun at Mellon Institute of Industrial Research, Pittsburgh, under support of this organization, in which the hygienic, technologic and economic aspects of air contamination, especially by dust in the industries will be studied. H. B. Meller, managing director of Air Hygiene Foundation of America, will head this investigation.

New Showroom

Open house was extended to master plumbers, heating engineers, architects and others at the formal opening of the Crane Co.'s new showroom at 201 Church St., Buffalo, N. Y., the afternoon of Nov. 16. Fred Zander, manager, and his entire staff, acted as hosts. The affair was excellently attended and company officials received many congratulations on the attractiveness of the showroom and display.

Joins National Fan

K. E. Whitman has joined the National Fan and Blower Corp., Chicago, Ill., as vice president and general sales

K. E. Whitman

manager, it is announced by this company. Mr. Whitman has been associated with the fan, blower and unit heater industry for the past fourteen years.

Palmer Branch

Palmer Plumbing Supply Co., Rochester, N. H., has opened a branch with showroom and warehouse in Portland, Me., at 337 Forest Ave. Frank O'Brien, who has been connected with the company in a sales capacity for many years, is the manager of the new office.

Tryco Officers

The following new officers were elected by Tryco Products, Inc., on Nov. 7 to fill the vacancies caused by the recent death of Stanley S. Shepard, president and treasurer of the company: president, Miss Maibell K. Shepard; director, treasurer and general manager, Franklin T. Holmes; and sales manager, Charles H. Shepard.

Mr. Holmes was factory representative for the company from 1922 until 1930, during this period becoming acquainted with members of the industry in the northeastern part of the country. From 1930 until the present, he has been general superintendent.

Kennedy Appointment

Announcement has recently been made by The Kennedy Valve Mfg. Co., Elmira, N. Y., of the appointment of Frank De Witt & Co., 5736 Twelfth St., Detroit, as its representative in the lower peninsula of Michigan, including Detroit. This concern will handle Kennedy valves and fittings for industrial plants and for commercial and residential buildings of all types.

Zurn

J. A. Zurn Mfg. Co. has moved its New York City office from 17 W. 19th St. to 489 Fifth Ave. In connection with the change, George H. Lang, vice president of the company in charge of sales, reports that L. W. White, who has been representing both the Zurn company and The Brunswick-Balke-Collender Co. at the former address, has resigned from The Brunswick-Balke-Collender Co. and will give his full attention to the direction of Zurn sales in this territory. It is stated that an expansion is planned in New York and eastern markets.

Moves Offices

The executive offices of Link-Belt Company, for many years located at 910 S. Michigan Ave., Chicago, have been moved to the Bell Building, 307 N. Michigan Ave., it is stated in a recent company announcement.

Republic Changes

Announcement of a number of organization changes has recently been made by N. J. Clarke, vice president in charge of sales for Republic Steel Corp. Changes include the naming of Robert J. Working as district sales manager in Birmingham, Ala., territory, succeeding Kenneth D. Mann, who has resigned to become executive vice president of the Truscan Steel Co. Mr. Working has been district sales manager for the company in Cincinnati, and he is succeeded in this position by Paul R. Johnston, who has been with Republic since 1922, in recent years being in the Cincinnati office.

Another appointment is that of Charles W. East, formerly of the Birmingham, Ala., office, who has been named assistant manager of sales in Republic's pipe division, succeeding George E. Clifford, recently named district sales manager for the company in the Los Angeles territory.

C. A. Cherry has been appointed district sales manager in the Buffalo, N. Y., territory. He replaces Thomas B. Davies, who has been transferred to the company's alloy steel division. Before the transfer Mr. Cherry had been assistant manager of sales in the carbon bar division.

Canadian Whitehead

Plans for the organization of the Whitehead Metal Products Co. of Canada, Ltd., and installation at Port Colborne, Ontario, of facilities for the manufacture of monel metal hot water tanks were announced today by J. C. Nicholls, assistant to the president of The International Nickel Company of Canada, Limited.

The plant will be housed in a building of the Nickel Company's refinery, which became available when one of

39 Years of Leader-ship!

"GOOD" Velvet-Seat Tank Bulbs

"GOOD" Adjustable Fuller Balls

"GOOD" Heavy-Duty Concave Faucet Cushions

The Success of the GOOD MANUFACTURING CO., Inc., is based on one principle only:

● QUALITY

Of greatest importance to us is making "GOOD" Goods of the finest Quality materials possible to obtain.

Of greatest importance to the Plumber—in buying—is to buy the Quality of Goods that back up the Journeyman's work. That Quality will only be found in "GOOD" Plumbing Specialties.

GOOD MFG. COMPANY INC. NEW YORK

the final processes in nickel separation was transferred from Port Colborne to Copper Cliff two years ago. The Canadian company now being organized will be a wholly owned subsidiary of International Nickel.

Thrush

Recently announced by Lewis H. Dietz, sales manager of H. A. Thrush & Co., is the appointment of R. E. Lund as direct factory representative for the company in charge of the New England territory, with headquarters at Boston. Mr. Lund has been representing a boiler and radiator manufacturer in eastern Conencticut. He will assume his new responsibilities Jan. 1, and at this time E. D. Noland, who has been the factory representative of the Thrush company in Boston, will return to the factory to the general office staff.

Byers

Recently announced by M. J. Czarniecki, vice president of A. M. Byers Co., are several organization changes: R. H. Gardner, formerly division manager of the Byers Washington office, has been transferred to Pittsburgh as manager of steel pipe sales. Simultaneously, E. L. MacWhorter, formerly manager of the company's Philadelphia division, moves to the Munsey Bldg. in Washington, where he will head the combined activities of both divisions, now to be known as the Washington division. District representatives will be maintained, as in the past, in Baltimore and Philadelphia.

New Office

King Ventilating Co. of Owatonna, Minn., has just opened a new sales office at 545 W. Washington Blvd., Chicago, which will be devoted to industrial sales. F. L. Hutchinson, sales manager, and T. J. Rider, Jr., manager, will be in charge.

York Meeting

Plans for the coming year were the subject of discussion at the annual fall meeting of regional, branch and sales managers of the York Ice Machinery Corp. which was held the week of Oct. 26 at the company's main offices at York, Pa. Further expansion of the commercial refrigeration division and a vigorous sales program on air conditioning were included as important factors in the coming year's program.

During the same week, branch engineers also convened at the factory holding joint sessions with the managers on the first two days and meeting separately during the remainder of the week. The new developments projected for next year were explained to the field men and their criticism invited as an aid to factory engineers.

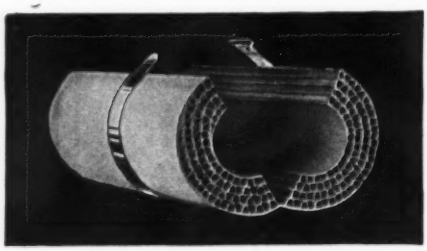
Columbia Pipe

Announcement has recently been made of the organization of the Columbia Pipe & Supply Co., 3610 S. Morgan St., Chicago, Ill. The new company will handle valves, fittings, fabricated pipe, pumps, well drillers' supplies, and plumbing and heating material, it is stated, and complete warehouse and pipe shop facilities will be maintained.

Officers of the company are Thomas Floro, president; H. E. Shoff, vice-president; J. T. Arenberg, treasurer; and C. W. Zoeller, secretary.

New Supply Company

The Luzerne-Lackawanna Supply Co. has recently been formed in Wilkes-Barre, Pa., by Jos. Wempa, Earl Holmes, and John O'Rourke, all of whom have been active in the supply business in this territory for many years.



CELLOTONE
Accepted as
"STANDARD"

This type of insulation was first introduced by Norristown in 1929 and has been accepted as the standard type of low pressure pipe insulation.

Containing all the modern improvements of air cell construction, CELLO-TONE is a one-piece type of pipe insulation on which the old style outer canvas covering has been replaced by a specially prepared sheet of heavy asbestos felt which acts as a hinge when the section is opened to permit of easy application. This naturally reduces application time and cost. This outer surface is usually furnished in the natural finish, but may also be had tinted a light pink. Made only in ¾" and 1" thicknesses (3 or 4 ply) and three, one inch black bands are furnished with each section. Packed in the "original" Norristown cartons which fully protects the covering in transit, storage or on the job.

Write for catalog covering complete line of Norristown insulating products.

Norristown Asbestos
Flexible Range
Boiler Jackets

Due to its low manufacturing cost, splendid efficiency and ease of application this Norristown creation has become very popular.

It is made of an excellent grade of specially processed corrugated asbestos felt, formed into an extremely flexible jacket. The outer layer or covering has been crimped, giving it a very pleasing appearance.

Can be furnished in various painted finishes or with plain asbestos paper not crimped.

Packed in compact carton units with asbestos cement to cover top of boiler and five wide black bands for application. Set up in a few minutes.

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MAGNESIA & ASBESTOS CO
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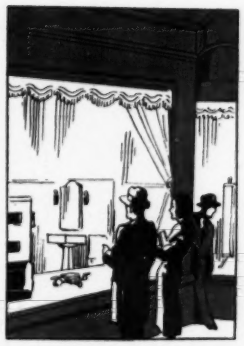


Trade

News of . . . Men . . . Associations . . . Events . . .

Penn Masters Hear Frank

● *First mid-winter meeting draws an enthusiastic attendance — President Frank tells vital need of organization.*

The inauguration of the plan of the Pennsylvania State Assn. of Master Plumbers to hold mid-winter meetings for the purpose of building up the membership of the organization drew an excellent response from master plumbers of Pennsylvania on the occasion of the first meeting of this type held Nov. 23 at the William Penn Hotel, Pittsburgh, Pa. Approximately 70 regular members were in attendance in addition to a good number of non-members.

Everyone present expressed approval of the plan of mid-winter meetings and it was suggested by several that the number of such meetings be increased to four or five.

Speakers

Speakers at the session included Geo. W. Frank, national president, who gave a compelling address on the vital necessity for organization in the plumbing industry; Harry A. Reed, president of Standard Sanitary Mfg. Co.; Vice President Henry O. Heiser; William J. Mosher, representative of the Federal Housing Administration; and Major Joel I. Connolly, representative of the Chicago Board of Health. President Harry A. Saeger presided over the meeting and in his address of welcome urged all to take an active part in bringing in new members and asked for the cooperation of members of local associations in an active drive. All present were welcomed to Pittsburgh by F. J. Hanley, president of the Pittsburgh Master Plumbers' Assn.

In his address, President Frank called attention to the dangers now besetting the distribution system of the plumbing industry, stating that were the controlling, organized influence of the National association withdrawn, this system would be swept away almost overnight. Members could not but be profoundly influenced by the earnestness and logic of his address, which is given in part below:

"It is a very happy privilege to have this opportunity of bringing to you members of our great National association and to those present who are not members, a message on the value of organization.

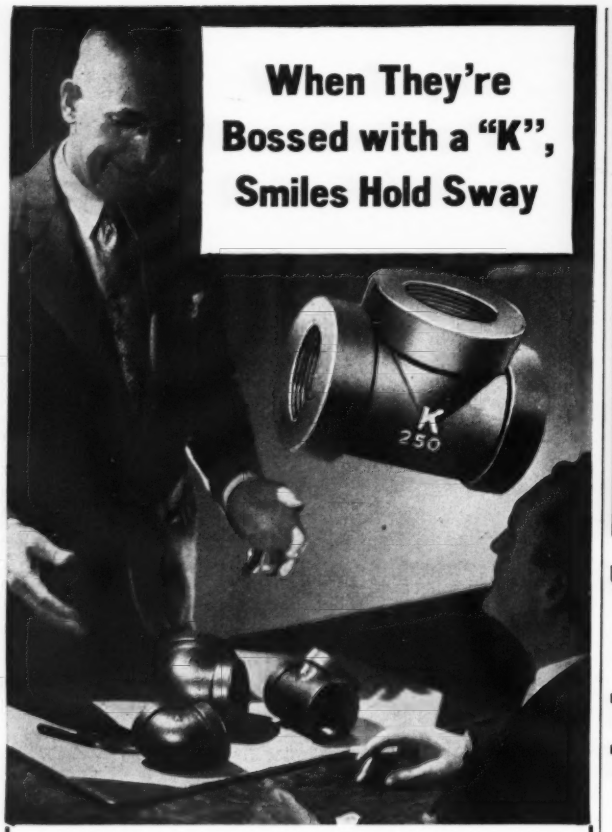
"I sometimes wonder why so many master plumbers remain individualists in the midst of the most highly developed organization to be found anywhere in the world. Even as children in the primary grades, Americans learn that in unity there is strength, and the early history of this country is a splendid demonstration of unity's value. The thirteen colonies which originally banded themselves together to attain liberty, have resulted in a union that now comprises 48 States, motivated by a united purpose and with a single objective.

"In our own industry we find a parallel closely akin to the development of the country of which we are a part. In 1883 an informal group, representing a mere handful of master plumbers, met and sealed the compact which has kept us in continued existence ever since. We, too, have grown until our membership embraces a majority of those engaged in the business of master plumbers, in every State of the Union and the District of Columbia.

"However, just as there are groups and individuals who do not see eye to eye with our national government, but who, nevertheless, continue to enjoy life, liberty and the pursuit of happiness under its benevolent regime, just so is there a group of master plumbers who enjoy the benefits for which the National association has been responsible, without joining it, aiding it, or in any way conforming to the high principles on which it was founded.

"I think it can be demonstrated that the N. A. M. P. has held an umbrella over both the members and non-members for a number of years, to preserve them from the inclement blasts and disruptive forces which seek to destroy us as individual, self-supporting business men. Non-members should remember that. Regardless of their lack of financial participation in the growth of the Association, the non-members have enjoyed the benefits for which the N. A.

At the first mid-winter meeting of the Pennsylvania State Assn. of Master Plumbers. Reading left to right: James McStay, director, Philadelphia association; John H. Saeger, secretary-treasurer, Allentown association; Thomas F. Scanlon, director, Pittsburgh association; F. J. Hanley, president, Pittsburgh association; and Harry A. Saeger, president, Allentown association



In Other Words—

There's experience in them—47 years of it.

There's iron of the right analysis in them.

They're close of grain and smooth and clean.

They're hand inspected and, being accurately threaded and chamfered, they're guaranteed to make up easily and pull tight—the significance to you of that "K" on the casting.

Complete Line in Heavy Production

Standard and Extra Heavy Screwed Fittings,

American Sprinkler Fittings, Standard Flanged Fittings,

Standard and Extra Heavy Companion Flanges, Drainage Fittings,

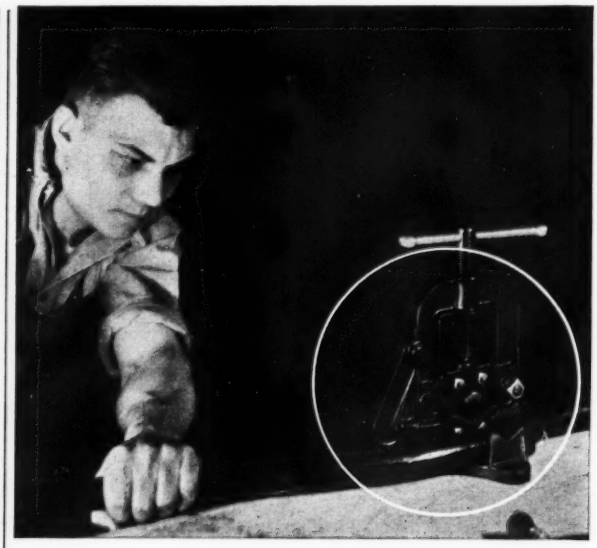
Strict adherence to M. S. S. standards.

Combined marketing facilities on both "K" cast iron and on M. I. F. malleables. Complete stocks of both at Dayton, Ohio, and Branford, Conn.

KUHNS BROTHERS COMPANY, Dayton, Ohio

K Cast Iron Fittings Since 1887

Catalog for Plumbers and Industrial Users



VISES

THAT HAVE EXTRA TOOL FEATURES...

IF you are used to taking pipe vises for granted, stop, look and listen.

- Pipe vises are usually plain substantial devices for holding pipe, but RIDGID Vises are much more than that.
- They are all equipped with handy efficient pipe benders.
- They all have pipe rests built into them.
- Yoke and chain vise stands have handy tool trays.
- Yoke and chain post vises are equipped with oil can holders.
- And in 2" and 2½" capacities all RIDGID vises are equipped with No-Mar jaws for nickel pipe.

These features make it well worth your while to ask for RIDGIDs when you buy vises. See your jobber.

THE RIDGE TOOL COMPANY
ELYRIA, OHIO, U. S. A.

RIDGID

PIPE WRENCHES, CUTTERS, THREADERS, VISES

M. P. was solely responsible. If anyone doubts the value of the N. A. M. P. in preserving the basic structure on which the prosperity of the Master Plumber depends, let him turn to other, and similar, industries and observe what is going on there. Brick, lumber, tile, glass, paint, and I could enumerate a host of other materials, with few exceptions, can be purchased anywhere, by anyone desiring to use them, at the same price the contractors in those lines pay for them. The profits on these materials which should go to the contractor dealing in them, go to others. He is given only the dubious privilege of supplying labor, subject to all its regulatory restrictions, and must pay compensation insurance and other required expenses.

Practically Alone

"Let us look at our own situation. We find that we, practically alone in the building industry, still sell the merchandise we install, and still have the opportunity of deriving a profit from its sale. No one can truthfully say that the distribution system we all enjoy has been the result of an interest in our behalf on the part of those who manufacture and distribute the materials we use. The number of complaints which we receive against direct selling indicates that, were the controlling influence of the National association removed, the distribution system we now enjoy would be swept away over night. I believe no single force in the industry has done so much to stabilize distribution as the N. A. M. P.

"In urging that all master plumbers join their local association, I am not attempting to paint a gloomy picture of what will happen if they don't; all I know is that direct selling is on the increase, and that unless something is done about it, we will all be engulfed in the flood. As 'rugged individualists' we are powerless, but as individual members of a great industry organization, presenting a solid, unified front, we can accomplish every laudable purpose attempted.

"We are living in perilous times. No one knows definitely just where we are headed. The Federal government has ceased to be purely legislative and has embarked in active engagement in business—yes, even in the plumbing contracting business. Where will we master plumbers be if we persist in individualism? As scattered, isolated units, each following the dictates of his own ideas, we can only wage guerilla warfare against the forces that seem bent upon our destruction. If we are unorganized, all we can do against unorthodox distribution is to shake our fist in impotent rage; if we are unorganized, the legal barriers which have been erected in the interest of public health will be swept away by the real estate and building interests who say these restrictions hamper them; if we are unorganized, we shall soon find ourselves in the position of our compeers in the building industry, who stand at the general contractors' doors for the dubious privilege of bidding to see how little money they will lose.

Trend of Attack

"At the recent Real Estate Board's Convention in Atlantic City on Oct. 23—just one month ago—the subject of purchasing plumbing materials direct was a live topic of discussion. Does this not indicate the trend of the attack on our industry? Does it not make it imperative that we organize more closely to preserve ourselves from the enemy in our midst?

"Indifferent members—former members—and non-member master plumbers must realize that through their lack of interest, or disinclination to carry on with those in the craft who continue to bear the burden of battle, they are helping to break down the barriers of protection and progress which were so far-sightedly erected by their predecessors. They must realize that they, themselves, to say nothing of their children and those who follow, will benefit by following the principles of good business and ethics which are the foundation of our association.

"Through the course of many years, the National Association of Master Plumbers and its affiliated State and local associations have consistently endeavored to maintain and expand the protective and controlled distribution methods that have been developed within the industry. We have constantly striven to broaden and intensify the restrictions placed on methods of installation.

Distribution Methods

We can say these attempts have not been actuated solely by selfishness and the desire to build a fence around ourselves as master plumbers. There have been higher purposes behind our actions. Plumbing is a health measure. Medical associations and public officials agree on that. Properly installed plumbing has a direct effect on the safety of our people, and as the chief proponents of good installations, we have striven to protect the public from insanitary and improper installations by proper regulation of the methods of installing systems of water supply and disposal of waste. The promiscuous sale of plumbing materials to the public leads to improper and unsafe installations. Installations by persons ignorant of accepted practice, or by those who give no thought to the eventual results, places the public squarely in contact with those water-borne diseases which are the result of contaminated water supply. Being proud of our calling, we are working toward the goal of having plumbing generally accepted as a health measure.

Conditions Changing

"The entire complexion of American life is changing. We see evidences of this change around us every day. The gap between the rich and the poor is widening. The middle class writhes in pain, ground between the pressure from on top and the importunities from below. The independent merchant—the bulwark of the middle class—finds it more and more difficult to resist the pressure of chain-store merchandising methods. Where are we in this rapidly changing situation? We are independent merchants. We are members of the middle class. Are we to do what other independent merchants have done—give up and take our place as employees of somebody else? Are we to supinely relinquish the heritage and responsibilities passed on to us? I know I'm not going to give up without a struggle. But I do know that we will all have to give up unless we organize. There is too much pressure for anyone alone! **Organized** we can stem the tide and preserve our business existence.

"In closing, I want to leave but one thought with you—individualism can never take us anywhere. Organized effort is our only weapon!"

Heiser

Henry O. Heiser, vice president of the Pennsylvania association, gave in his talk a full report of the activities of the legislative committee of the association. He said that in order for the legislative committee to function well it is necessary for each member to contact his representative and senator and gain support for bills that are pending in the legislature.

In his talk, FHA Representative William J. Mosher explained to the meeting how master plumbers can increase their business by taking advantage of the FHA, while Major Joel I. Connolly, Chicago Board of Health representative, gave a talk illustrated with slides and motion pictures.

At a meeting of the board of directors of the Pennsylvania State association held on the occasion of the meeting it was decided that the State Convention will be held May 18-20 at Allentown, Pa., with headquarters at the Americus Hotel, and that the next midwinter meeting would be held in Bethlehem, Jan. 25, as scheduled, with headquarters at the Bethlehem Hotel.

New N. J. Heating Assn.

● *Constitution of recently formed organization adopted by masters at quarterly convention of New Jersey State association.*

A vast amount of constructive discussion and action was concentrated in the one day's sessions of the quarterly convention of the New Jersey State Assn. of Master Plumbers, held on Nov. 20, at Rhineland Garden, West Caldwell, N. J. The meeting was under the auspices of the Montclair, Bloomfield, Verona and Viicinity local association.

One of the developments of the meeting was the adoption of the constitution and by-laws of the recently incorporated New Jersey Heating Assn. Other features were an explanation of the work and objectives of "The Crusaders" by members of this organization, a demonstration and talk on gas fired boilers by representatives of the Public Service Company of N. J., and discussions on the question of unfair distribution of materials and on the subject of a State agreement between master plumbers and heating contractors, and journeyman plumbers and steamfitters. The meeting was called to order by Henry Williamson, president of the local association, and he, in turn, turned the session over to State President Edmund P. Ingram of Jersey City, who presided and introduced the speakers.

At the quarterly convention of the New Jersey State Assn. of Master Plumbers. Top row, left to right: Officers of the New Jersey State Heating Assn.—Louis Maier, Newark, president; Irving Chew, Haddonfield, vice-president; and Geo. H. Werner, Orange, treasurer. Bottom row, left to right: Frank Booth, president, and John Windheim, both of the Nutley association; and Geo. L. Bird, Elizabeth, secretary of the New Jersey State Heating Assn.

Heating Association

In order that the work and the constitution and by-laws of the recently incorporated New Jersey Heating Assn. could be placed in detail before the members, the officers of this group were temporarily placed in charge of the meeting. The president of this association, Louis Maier, then outlined the reason for its formation and listed among its purposes the advancement of the heating industry, the education of members of the craft, and the establishment of harmonious relations between members of the heating and plumbing industry and industries kindred thereto, their journeymen and apprentices.

There followed a paragraph-by-paragraph discussion of the constitution and by-laws of this group which resulted in the inclusion of a few revisions, after which these were unanimously adopted.

Officers of the New Jersey Heating Assn. are: Louis Maier, Newark, president; Irving Chew, vice-president; George L. Bird, Elizabeth, secretary; and George H. Werner, Orange, treasurer.

It was pointed out in discussion that one of the main purposes of the new organization will be to promote the distribution of heating materials through proper channels. After discussion, this subject was placed in the hands of the conference committee, the members of which were appointed by President Maier of the Heating association as follows: Ronald Needham, Atlantic City; William J. Kelley, Camden; Frank Penrose, Trenton; Arthur Newman, Plainfield; C. John Klimback, Essex Fells and Sam Crawford, Jersey City. It was prophesied by Albert Ruehl and President Maier that in two years' time there will be heating inspectors in New Jersey functioning along the same line as plumbing inspectors.

Crusaders

Representing "The Crusaders" at the meeting were Ed. Geyer, Geo. L. Bird and Herman Baumgartner. These men spoke briefly on the objectives of this organization and the plans which they have been developing for touring the State. They urged the members to go out into their communities and preach the gospel of sanitation and emphasize what the plumber means to the health of the nation. Mr. Baumgartner read a paper to the assembly entitled "A Plumber's Civic Duty and Obligation in His Community," which is given in part below.

"Plumbing must be considered a health measure," it was pointed out in this paper. "It is not a cure of all the ills of the public, but it is a disease preventative." The paper then referred to the epidemic of amoebic dysentery in Chicago during the World's Fair, and the question was asked: "Suppose a similar outbreak should occur in your locality and it could not be traced to unskilled workmen. Who would be blamed? In the first place, the board of health. Secondly, the master plumbers.

"Don't forget that by your license you assume a responsibility to the public. . . You must ever bear in mind that this license is to you an open sesame to the home, with a guarantee from your board of health that you are a skilled and competent workman. . . Knowing the seriousness of waterborne diseases, are we doing our duty to acquaint the general public of the necessity of sanitary plumbing in their homes and of the necessity of obtaining a responsible, skilled workman for this work? Ask people if they know

At the quarterly convention of the New Jersey State Assn. of Master Plumbers. Reading left to right: Ray Bocca, Orange; T. J. Berg; Geo. Fricke; John J. Corcoran, Jersey City; Clyde C. Cole, Weehawken; Chas. Werner, Jersey City; Nick Triana, Union City; Fred Baker, Guttenberg; Wm. Haemmerle, Union City; and Edw. Bender, Pierce, Butler & Pierce Co.

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—Because it...

LIMITS THE TEMPERATURE

The "Defender" Emergency Gas Shut-off Valve illustrated herewith POSITIVELY PREVENTS OVERHEATING of Gas Water Heater Tanks. It is a REAL EMERGENCY VALVE, because it works only when excessive temperature occurs — and then it automatically turns off the gas and keeps it turned off until the trouble can be found and corrected.

Like all other KITSON EMERGENCY VALVES (Lovekin Patents) the "Defender" actuates upon the time tried and proven principle of TEMPERATURE LIMITATION.

Above: The "Defender" Emergency Gas Shut-off Valve (Type IHF-22)

Send for our interesting literature on the subject of Emergency Control based upon years and years of exhaustive study, research, experimentation and actual service factors. No obligation.

NOTE
The "Defender" Valve operates upon the melting of a special Chemical Fuse; and an exclusive feature is that this fuse is NOT in direct contact with the water—yet it is in direct thermal contact with the water at the hottest point.

Kitson also manufactures Ground Key Stops for Gas and Water, and Brass Plumbing Products.

(Established 1897)

KITSON COMPANY
261 No. BROAD ST.
PHILADELPHIA PA.

WHEN INSIDE SURFACES
MUST BE CLEAN

Especially is this of vital importance in the smaller pipe sizes where the percentage of capacity may be materially decreased and small valves and instruments may be rendered useless by a small amount of foreign matter.

Fretz-Moon Pipe is as clean inside as outside—even in the smallest galvanized size. In its original form as skelp, at the beginning of the "continuous process," it is as clean as flat-rolled steel can be had. Throughout every phase of the "continuous process," this cleanliness is protected. Never once does the skelp come in contact with the furnace bottom where it may be contaminated by foreign matter. And when galvanized, the pipe is blown clean inside by superheated steam.

If you're looking for clean pipe, consider Fretz-Moon. Ask us to send you a sample taken from stock.

FRETZ-MOON TUBE CO., INC.
BUTLER • PENNA.

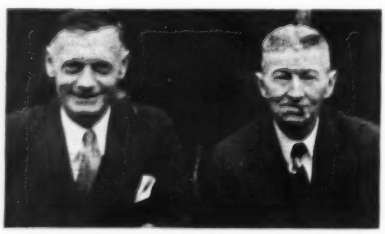
FRETZ-MOON PIPE
BLACK AND GALVANIZED

Group pictures taken at the quarterly convention of the New Jersey State Assn. of Master Plumbers. On the left—the Camden association's delegation. On the right—the "hosts" of the convention, members of the Montclair, Bloomfield, Verona association

whether the apartment they live in is kept in a sanitary condition. Also ask about the office building in which they work, the hotels at which they stop and the resorts to which they take their children in the summer. . . Remember the Chicago epidemic and the fact that the general public is, unknowingly perhaps, taking their lives in their hands and that death is the penalty. To convey this information is your civic duty."

In a talk on "Gas Fired Boilers," J. P. Leinroth, general industrial fuel representative of the Public Service Company of N. J., pointed out to members that both the plumbing and heating industry and the Public Service company are vitally interested in the fact that the public is becoming more conscious of gas house heating.

"The question," said Mr. Leinroth, "is what is there in this for the plumbing and heating contractor." He stated that the company will go out and sell the burner and will turn all installations over to the contractor. Also, the utility would supply salesmen to follow



Jos. Berg, secretary, Orange association, and Geo. Brenner, third vice president of the State association, at the quarterly convention on the New Jersey State Assn. of Master Plumbers

up leads furnished by the contractor if the latter feels he cannot close the sales himself, at the same time allowing him a commission on the burners. After a demonstration of gas fired boilers, which was illustrated by the use of moving pictures, there was an open discussion and questions raised by the contractors were answered by the utility's representatives.

During the morning session National Vice President Geo. H. Werner, who is also treasurer of the New Jersey State association, received a great welcome when introduced and spoke at some length on the need of greater membership in the N.A.M.P. He made a strong plea for the local associations in New Jersey to do everything possible to increase their membership.

The first speaker of the afternoon was A. R. Lawrence, special deputy commissioner of banking and insurance, and chairman of the Compensation Rating and Inspection Bureau of N. J., who spoke on workmen's compensation laws, and answered many questions pertaining to this subject. After this talk Jas. Brennan, Jersey City, suggested that New Jersey should adopt a law similar to the one in effect in New York City, which provides that a business man applying for a permit to do work should be required to produce his compensation insurance papers or else post a bond.

Distribution

One of the questions raised at the meeting was the unfair distribution of materials. After a discussion of this subject, the association voted that a committee should be appointed to contact manufacturers to see what could be done in the matter of controlling distribution through wholesalers who handle products in a proper manner. This question was placed in the hands of the present conference committee of the association.

The after dinner session was mainly concerned with the question of an agreement between contractors and journeymen. Members agreed to the general idea that working conditions should be uniform throughout the State, but felt that wages should be decided by the various local areas because of varying conditions and agreements.

Other speakers at the meeting were Malcolm K. Douglas of the pipe and fittings division of the American Radiator & Standard Sanitary Corporation; Chas. W. Norby, New York district manager for H. A. Thrush & Company; and Leo Sherman, president of the Vinco Company, Inc.

Mass Meeting

• *President Frank and other prominent leaders are speakers at big Philadelphia rally*

A huge rally, sponsored by the Master Plumbers' Assn. of Philadelphia as a part of its intense drive for new members, was held at McCallister's in Philadelphia on Dec. 2 with more than 400 master plumbers and others present to hear speeches by prominent men in the industry. President Geo. Hicks presided and introduced the speakers.

High spots of the meeting included addresses by President George W. Frank, who told of the necessity of organization to combat menacing present day problems; Herbert M. Packer, chief of the Bureau of Housing and Sanitation, who spoke on the advantages of the new plumbing code recently adopted in Philadelphia; Russell G. Creviston, sales promotion manager, Crane Co., who told of the present favorable outlook for the plumbing and heating business and urged the selling of plumbing and heating as health and comfort; Wm. J. Flynn, national director, who cited the important contributions of the master plumber to the life and health of the nation; and Ernest L. Flentje of the N.A.M.P. who analyzed the present situation and problems of the master plumber and told how the National association is assisting in solving these problems.

Following Mr. Flentje's talk, Walter Raid, chairman of the membership committee of the Philadelphia association, outlined the many benefits derived from association membership and the reasons why every master plumber should join.

The enthusiasm of those attending was everywhere manifest and it is expected that a large number of non-members will put in their applications to join the association. At a recent meeting of the Philadelphia association 50 new members were added as a result of the drive.

Chicago Mid-Winter

On Nov. 30, the Chicago Master Plumbers' Golf Assn. held its first mid-winter meeting in the Congress Hotel, Chicago. Short talks were given by John Calnan, national director; Peter Munn, secretary of the Chicago association; Harry Yelton, Inland Supply Co., and George Hoffman, Crane Co.

Perhaps the high point of the evening was reached when Charles Drier presented a merchandise check to Wm. Redieske in appreciation of the fine service he had rendered as president of the golf association during 1935. Mr. Redieske was reelected to that position, and one of his first official actions was to appoint Joe Carroll of the Crane Co. to represent the supply houses in the 1936 association.

New League

● *Recently organized contractor group, north of Chicago, makes rapid progress*

The Northeastern Plumbing and Heating League, a relatively new contractors' organization covering a large territory to the north of Chicago, held a successful meeting at the Public Library in Lake Forest, Ill., Nov. 25.

The League's territory extends from the north city limits of Chicago to the Wisconsin state line and west to the Fox River Valley where it meets the eastern boundary line of The Western Plumbing and Heating League.

Henry Strenger of Lake Forest is president of the Northeastern league. The other officers are: William Green of Waukegan, Ill., first vice president; W. H. Gregg of Evanston, Ill., second vice president, and Alfred J. Chester, also of Evanston, secretary. The executive council is composed of Ed. Strenger of Highland Park, Ill., A. J. Butow of Evanston, Freeman Abbott of Lake Forest, and the league's officers.

Cost-Minded Contractors

● *Buffalo Master's association inaugurates accounting school for members, their families and their employees.*

As a result of some energetic work by Fred Fleischauer, business manager of the Master Plumbers Association of Buffalo, N. Y., the members of that organization are becoming very "cost-minded," as shown by the large number who attended the first assembly of the class in cost accounting at the association rooms, Nov. 21. Mr. Fleischauer early in the month sent the following letter to the members, which was approved by President William Ludlow:

"Are you ready for the Accounting Class?

"The first 20 or 25 names received at this office comprised of members, their wives, sons, daughters, and bookkeepers, will be eligible for the first class to be started at once in order that they may finish before the spring rush, or possibly earlier. The price of the course will be 50 or 75 cents a week. A very competent accountant will instruct.

"After the first 25 names have been enrolled, you will have to wait until the second group of a like number are enrolled, so do not delay. Write or telephone today. Get in the first class.

"Better accounting methods that will show in a clear and concise manner the exact status of the business, revealing all unprofitable transactions, is the need of the hour. Our younger members are admonished that any effort devoted to the study of business management now will pay dividends in after years. The time is now upon us when we must adopt modern business methods if we are to get our share of the unearned as well as the earned income of home owners. Why be content with last place when we are endeavoring to be first in line?

"This is your association, you can help make it worth more money to you by assisting in everything that it does to help your business. Enroll today and be introduced to your instructor next week."

The 30 members, including nine women, who immediately enrolled on receiving this letter, were duly introduced to their instructor at the meeting Nov. 21. He is William Pellman, an expert cost accountant and son-in-law of Henry Ritter, secretary of the National Association of Master Plumbers.

The second problem shown to those interested in cost accounting was that of a plumber who drew $40 a week from his business but who declared that it was necessary only for him to figure a profit and not overhead as he absorbed the latter by working at nights. This man owned his own property, employed a girl in his office, operated a truck and had the usual expenses of insurance, licenses, taxes and numerous other items, but even with all these expenses, he believed that if he charged a 10 percent profit on his labor and material that he would have a 10 percent profit at the end of the year. Mr. Fleischauer contended he should have charged in addition at least 17 percent for overhead.

A job this man had been figuring on was taken as an example. He placed his costs at $1,362.48. Using this statement of costs, he reached his selling costs as follows:

$1,362.48 labor and material
.10% profit expected

$136.2480 = $136.25

$1,362.48 labor and materials
136.25 supposed profit

$1,498.72 selling price.

This plumber's bid was $400 lower than his competitors. Had he known how to figure his costs by allowing 17 per cent for his overhead, he still would have landed the job and in addition made $367.69.

This was shown as the correct method of figuring

$1.00 whole or selling price
.17 overhead

.83
.10 profit

.73 decimal for correct figuring
.73) 1362.4800 (1866.41 = selling price
$1866.41
.10

$186.6410 profit

$1866.41
.17

1306487
186641

317.2997 overhead

$186.64 profit
317.29 overhead

$503.93 overhead and profit

Proof:
$1866.41 selling price
503.93 overhead and profit

$1362.48 labor and material cost.

By using the decimal .70, this plumber would have obtained a selling price of $1946.40 which would have included the right profit for the job.

Effective window display points out advantages of radiator heat to downtown Chicagoans

Western League

On Nov. 7 a delegation of members of the North Shore Plumbing and Heating Contractors' Assn., representing the suburbs to the north of Chicago, attended a special dinner meeting for members of the industry in Somonauk, Ill. A special bus was chartered for the trip.

The dinner meeting was sponsored by the Western Plumbing and Heating League, and was attended by approximately 250 representatives of the industry and their wives. Most of those present were from the Fox River Valley district. A delicious chicken dinner was served in the meeting parlors of one of the local churches. At the business meeting following dinner, merchandising methods and other topics of special interest to retail dealers were discussed.

Among those present were J. A. Van Nattan of Springfield, president of the Illinois Master Plumbers Assn.; William Brookman, executive secretary of the Illinois association; Charles Barrows, manager of the Chicago branch of Crane Co.; W. J. Spillane, sales manager, James B. Clow & Sons, Chicago.

Association Window

The Chicago Master Steamfitters' Association has adopted and put into effect the idea of telling the story of air conditioning and automatic heating, to persons in the Chicago downtown district, by means of a window display. The view reproduced above shows the November window, which was designed to typify a fall scene. The December design is to have a background of snow. The association offices are located in the Builders' Building, which is adjacent to the Chicago loop, and the show window, being on the ground floor, is ideally located to impress home owners and prospective owners when they pass.

Illinois Convention

The annual convention of the Illinois Master Plumbers' Assn. will be held at Chicago, Ill., Jan. 14-16, with headquarters at the Congress Hotel. This decision was reached at a meeting of the board of directors of the State association held in Chicago. President J. A. Van Nattan of Springfield, Ill., has appointed William J. Lang, of Chicago, chairman of the arrangement committee and Past President Henry P. Reger, chairman of the finance committee.

50 New Members

The success of the membership drive which is being conducted by the Philadelphia Master Plumbers' Assn. was strikingly evidenced at the regular meeting of this organization on Nov. 7 when 50 new men were voted into the association. Details of this drive, for which the charter has been opened for an entrance fee of only $5 instead of the regular $25, were given by Walter Raid, chairman of the membership committee. Mr. Raid told how he had appointed a captain for each zone in Philadelphia and these captains had appointed lieutenants so that every master plumber in the city could be visited and an effort made to have him become a member. The various captains also told of their work.

Preceding Mr. Raid's talk was the report of the special legislative committee, this report being presented by Philip Hering, Jr., chairman of the committee. Mr. Hering gave a complete history of the work of this committee and explained the advantages of the bill governing the installation of plumbing in Philadelphia which the committee had been successful in having passed. This new law will go into effect Jan. 1, 1936.

In discussing installation costs on gas appliances, Wm. C. Hirst, chairman of the gas committee, stated that the commission allowed for this work did not appear to be satisfactory to the men. He requested all members to send him their cost sheets so that he could present these to the gas company.

Ed Rinear, chairman of the apprentice committee, reported on this phase of the association's work and told of plans under way for three vocational schools in Philadelphia and of the cooperation he was giving to the board of education in laying out courses in plumbing and heating.

Secretary Pflug-Felder then read the paper which President Geo. W. Frank delivered before the recent C. S. A. meeting, and also a letter from National Director John J. Shanahan regarding the advertising of manufacturers and wholesalers, pointing out that the plumbing and heating contractor should be pictured as a business man, not as a journeyman, whenever he appeared in advertisements. Whenever the contractor is shown as a man in overalls a letter of disapproval should be sent to the advertiser in question, it was stated.

Harry M. Stillwell reported on questions dropped in the question and answer box. The questions dealt mainly with installation charges on gas fixtures, apprentice wages, and the rate for journeymen. The latter two subjects will be reported upon at the December meeting by the board of directors.

President Geo. M. Hicks presided at the meeting and gave an excellent talk on the association's activities and the membership drive now on.

Greater City Banquet

A banquet will be given by the Greater City Master Plumbers' Assn., Inc., New York City, on Saturday night, Dec. 14, at the Astor Hotel, it is announced by Irving Kleinfeld, executive secretary of the association. At a recent instructive and enjoyable meeting of this association, held at Damaszek's Manor, 12 St. Marks Place, New York City, on Nov. 14, there was considerable discussion of tanks and tank problems and their solution.

Springfield Guests

State President Henry Blank and 20 members of the Dayton Master Plumbers' Assn. were the guests of the Springfield master plumbers on Oct. 14 at a meeting held in the latter's association rooms on Main St., Springfield, O. After the showing of talking pictures which dealt with various types of pipe coverings and new ideas for better homes, refreshments were served and music was enjoyed.

DESIGNED FOR SPEED IN PRICE FINDING

Dependable Fittings

DEVLIN

CATALOG No.14

—AND PUNCHED FOR CONSTANT REFERENCE IN YOUR PRICE BINDER

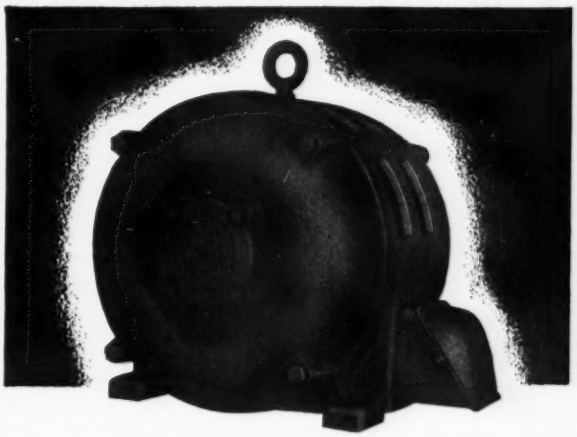
BRAND NEW
A postcard will bring your copy. FREE

Write for this complete new book

THOMAS DEVLIN MANUFACTURING CO.
Incorporated
Burlington, N. J.

Established 1882

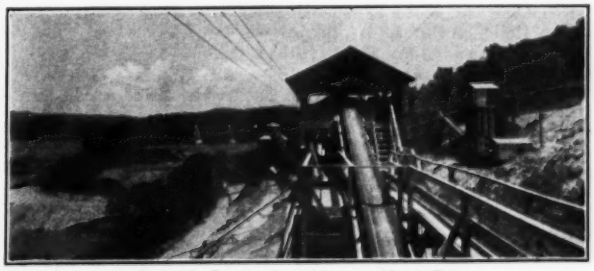
CENTURY SQUIRREL CAGE INDUCTION MOTORS



UP TO 600 *Horsepower*

ON particularly tough, dirty, wet jobs you will find Century Motors setting a record of continuously satisfactory performance! This statement stands on more than 30 years' proof! It is your safeguard in the selection of motors for driving your product or plant equipment — no matter what it is — no matter what severe demands are imposed upon it!

Here's more proof that Century can do a job for you:



One of the Century Installations at Norris Dam.

T·V·A· *and* CENTURY

For Materials-handling Equipment Century Motors are engaged in the dirtiest, toughest kind of service—many of them exposed to the elements—driving Rock Crushers, Gravel and Rock Screens, Conveyors and similar equipment.

CENTURY ELECTRIC COMPANY
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Century MOTORS

Optimism in S. C.

Favorable reports concerning the progress of business in their communities and concerning prospects for the immediate future were almost the universal rule in conversations of master plumbers attending the semi-annual convention of the South Carolina Master Plumbers Assn. held in Spartanburg, S. C., on Nov. 11. After business sessions featured by lively discussions of problems and prospects, the members were entertained by the Spartanburg association with a dinner at the Cleveland Hotel.

W. K. Prause, Charleston, is president of the association; J. L. Powers, Bennetsville, vice president, and T. W. Tompkins, Columbia, secretary-treasurer. Members of the board of directors, in addition to the officers are: Tom Chilton, Florence; J. J. McDevitt, Greenville; C. L. Lee, Spartanburg; H. W. Mappus, Charleston; W. A. Griner, Columbia; L. P. Phillips, Anderson, and L. S. Starnes, Rock Hill.

It was decided at the meeting that the annual convention of the South Carolina Master Plumbers' Assn. would be held in Florence, S. C., on May 12.

'Frisco Outing

The movement of the planets is no more regular than the annual outing of the officers and directors of the Master Plumbers Association of San Francisco, Inc.; and this year was no exception.

The week end of Nov. 23-24 was set aside for the gala event, when the full official family of the association climbed into their motors and hied themselves away southward to the beautiful Casa del Rey at Santa Cruz. The high light of the occasion was the Saturday night dinner party, presided over most unofficially by President Camp. Following Sunday morning's breakfast, the group split up, in favor of golf clubs and horse-shoes. Among those in attendance were: President Jack Camp, Vice President Victor J. Peterson, Treasurer Chas. Noury, Secretary J. J. McLeod, Ed. A. Balling, M. J. Cohen, Harold Bertram, Otto Anderson, Harry Wilson, George Y. Morton, F. Gomersal, D. J. DiVecchio, Chas. Welch, Wm. J. Monihan and H. L. Sales.

Nassau Talks Tanks

An open meeting of the Master Plumbers Assn. of Nassau County, Long Island, N. Y., was held Nov. 20, at Odd Fellows Hall, Hempstead.

At this meeting there was a very instructive discussion of tank problems and their solution, after which refreshments were served and entertainment was enjoyed.

Personals

Edmund Burke, who has been in charge of sales in the gas and oil industries for Crane Co., has been appointed manager of industrial sales by that concern. In his new position he will devote his activities toward developing markets for valves, fittings, and specialties in the industrial and construction fields. Mr. Burke joined the Crane Co. in 1910.

Robert C. Stanley, president of International Nickel Co., has been elected a member of the board of directors of the General Electric Co. Mr. Stanley represents various metal and petroleum interests in the United States and Canada and has been president of International Nickel since 1922.

Henry W. Foulds has become vice president of the Permutit Co., New York, directing sales, advertising and promotion.

Oscar C. Andersen, for the past eight years sales manager for Kainer & Co., has resigned his position with that company and will again operate as a manufacturers' representative with office in Chicago. Previous to his connection with the Kainer company, Mr. Anderson represented manufacturers in the Chicago district for eleven or twelve years.

C. P. Finke, formerly secretary and treasurer of the Optenberg Iron Works, Sheboygan, Wis., resigned from his position early in November to associate himself with the sales organization of C. A. Dunham Co. in Milwaukee. Mr. Finke is well known in the heating trade by reason of his long services in various capacities with the Heating, Piping and Air Conditioning Contractors National Assn.

Claude C. Griswold has been appointed to head the public relations division of Grace & Bement, Inc., advertising agency of Detroit with offices in the New Center Building, it was announced by E. R. Grace, president of the agency. In this capacity, Mr. Griswold will direct an aggressive publicity program for the plumbing ware division of the Briggs Manufacturing Company and the public relations activities of other accounts handled by the agency, including Gar Wood Industries, Inc.

E. Nute Sanbern, for many years connected with F. D. Mensing & Co., Philadelphia heating engineers, has recently joined the sales force of the Hoffman Specialty Co., at New York City.

Edward A. Hahl, who has been active in the water heater and heat interchange equipment field for many years, has joined the sales engineering staff of the American District Steam Co., North Tonawanda, N. Y., and will specialize in this type of equipment.

F. A. Zimmer of Chicago has been appointed a representative of the American Brass Novelty Co., Grand Haven, Mich.

Oscar Fabian is now associated with Jos. F. Lorber Co., Inc., Philadelphia, Pa., as vice president.

George F. Curry, who has been active in the handling of plumbing products in New York territory for several years, has joined the sales organization of Radiator Specialty Co., Charlotte, N. C., and will represent this company in the metropolitan New York territory.

M. F. Cotes, for the past three years manager of the heating division of Motor Wheel Corp., has been elected vice president of that company in charge of the heater division.

George E. Clifford, who has been assistant manager of sales in the pipe division of Republic Steel Corp., now has been appointed district sales manager for the company in the Los Angeles, Calif., district, it is announced by N. J. Clarke, vice president in charge of sales. In his new position Mr. Clifford will direct the sales of all Republic products in the Los Angeles territory.

Edward J. Colley, manufacturers' representative on plumbing and heating supplies, has recently taken on the line of the Rapid Spring Co., Pittsburgh, Pa., and will represent this company in the New York metropolitan area. Mr. Colley also represents the Davis Engineering Co., Elizabeth, N. J.

George Robinson, has been appointed sales engineer for the boiler department of Davis Engineering Corp., Elizabeth, N. J., in Brooklyn, Queens and Long Island territoy.

Harry T. Porter of Cincinnati, O., has been appointed representative for Cincinnati and vicinity of the American District Steam Co., North Tonawanda, N. Y. He will handle the company's line of steam distribution equipment.

Roosevelt—

(Continued from Page 49)

period, 1,995 cases were caused by cross connections, and 69 were caused by auxiliary intakes to polluted supplies.

"The total deaths from typhoid from the same causes during this period were 630. Of these, 126 were caused by cross connections, and 6 by auxiliary intakes. The total number of cases of dysentery for this period was 84,345; of which 6,535 were from cross connections, and 2,300 from auxiliary intakes.

"The control of these diseases rests largely in the proper design, construction and protection of water supplies, in the proper design and operation of water purification plants, the protection of the public water supplies from contamination by pollutional waters through open or faulty cross connections, the design and installation of plumbing of adequate capacity and the prevention of back-siphonage in all plumbing installations."

This effort constitutes a distinct governmental recognition of the relation of plumbing and public health, and accomplishes what was sought for in Resolution 17 at the Chicago Convention. In accomplishing these results, the N. A. M. P. has been largely benefited by efforts of the National Public Health Committee, of which Dr. Herman N. Bundesen is Chairman.

The survey will start as soon as the project has received the approval of Comptroller General McCarl. Mr. McCarl passes on whether or not a project comes within the purview of the language of the appropriation by the Congress. While this approval by the Comptroller General is more or less a routine matter, work will not actually start until he has scrutinized the project.

California Convention

President W. H. Picard of the California State Master Plumbers' Assn. has announced that the 1936 convention will take place at Del Monte on May 25 to 28, with headquarters at the Hotel Del Monte. J. F. Lindstrom of Burlingame, secretary of the Peninsula association, has been appointed directing chairman. Definite committee assignments will be announced later.

Petrie Resolution

Presented below is a portion of the resolution recently adopted by the New Orleans Assn. of Master Plumbers honoring Louis Petrie, who died Oct. 22:

Whereas, An all-wise Providence has removed from among us our esteemed friend and associate, Louis Joseph Petrie, who entered into rest Oct. 22, 1935, and

Whereas, during the years he was an active member and director and officer of our Association he commanded the confidence and respect of his business associates, and

Whereas, His advice and counsel and loyalty was ever a source of strength to the New Orleans Association of Master Plumbers as well as the State and National Associations, in which, to the last, he maintained a most intense interest.

Therefore Be It Resolved, That we, the New Orleans Association of Master Plumbers, deplore more deeply than we can express the passing of one who was so intimately associated with the growth and development of our organization.

Resolved, That in the death of Louis Joseph Petrie, the New Orleans Association has lost a loyal member; our community a useful and upright citizen; and his family a faithful, loving husband, father and son.

Obituaries

I. J. Brown

Isaac J. Brown, retired New York City plumbing contractor and one of the best known figures in the plumbing industry in the East, an enthusiastic association worker, died on Oct. 29 at the Reconstruction Hospital, New York, after an illness of several weeks. He was 77 years of age.

Mr. Brown was the first president of the Greater New York Master Plumbers' Assn., holding this position for ten years, twice president of the Manhattan association, president of the New York State association in 1910, State secretary in 1912, and a National director during the administration of Frank Fee. In recent years he had been an honorary member of the Manhattan, New York State, and National associations, and although retired from active business for some 20 years, he still attended meetings frequently.

Mr. Brown entered the plumbing trade as an apprentice at the age of twelve, going into business for himself with a partner in 1886. The concern founded at this time gradually grew to considerable prominence in New York.

Homer H. Highlands

Homer H. Highlands, widely known Gary, Ind., plumbing contractor and past president of the Indiana State Master Plumbers' Assn., died on Nov. 11. He was 76 years of age. Mr. Highlands came to Gary, Ind., in 1908 after earlier experience as a school teacher, a civil engineer, in the plumbing and heating business, and in the gas fixture wholesale business. He started one of the first plumbing shops in Gary and took out number one plumbing permit in that city.

Mr. Highlands was president of the first board of safety in the City of Gary, holding this position under Tom Knotts, the first mayor of the city. Alone he wrote the first plumbing ordinance for Gary at the request of the mayor.

In addition to being an active worker, a past president, and one of the first members of the Indiana State association, he was very active in the Gary Master Plumbers' Assn. and was secretary of this association for many years.

Frank P. Brown

Frank P. Brown, of Philadelphia, who retired from the plumbing business a number of years ago, died in his home in that city on Nov. 10. Mr. Brown's business was located for many years at 6th St. below Race. He was an active member of The Master Plumbers' Assn. of Philadelphia for nearly 50 years.

Benjamin E. Bensinger

Benjamin E. Bensinger, chairman of the board of the Brunswick-Balke-Collender Co. of Chicago, died of heart disease in his home in that city on Nov. 27. Although he had been ill intermittently for some time he had continued active in business affairs. He was 67 years old.

Mr. Bensinger became associated with The Brunswick-Balke-Collender Co. in 1885, and in 1905, after the death of his father, he became president of the company. He was elected chairman of the board in 1931. Surviving him are two sons, Robert F. and Benjamin E. Jr.

Winfield S. Dignan

Winfield S. Dignan, head of the plumbing concern bearing his name located at 256 Spring St., Trenton, N. J., died on Nov. 7. Mr. Dignan was well known in the contracting business and was a member of the Master Plumbers Assn. of the City of Trenton, N. J.

Stanley S. Shepard

Stanley S. Shepard, president and treasurer of Tryco Products, Inc., Westfield, Mass., died in that city on Nov. 1. He was 50 years old. Mr. Shepard had been active in the manufacture of pressure regulators, relief valves, ballcocks, and similar products for many years, having assumed the managership of the Try-Me Manufacturing Co. of Spring-

field and Westfield, Mass., in 1917. This concern was reorganized in 1925 as Tryco Products, Inc., and from this time until his death, he was president, treasurer and general manager of the latter concern.

Mr. Shepard was a graduate of Yale University, class of 1909. He was keenly interested in the activities of the Western Massachusetts Assn. of Credit Men and he served in the capacity of president of this organization one or more times.

William J. Kirby

William J. Kirby, president of the Somerville Stove and Iron Works, Somerville, N. J., died in his home in that city on Nov. 27. He was 66 years old. Mr. Kirby was nationally known as an authority on foundry engineering. He started his career in the molding and foundry trade as a boy, going to Somerville in 1905 where he developed the iron works.

Mr. Shepard was a graduate of Yale civic affairs, and held public office a number of times. He consistently refused to accept a salary for his services in this work, however, and resigned as acting chairman of the State Highway Commission when the legislature passed a law providing salaries for the members. He was a member of many local social and business organizations and a member of the Engineers Club of New York.

R. B. Larkey

Rasmus B. Larkey, for many years a plumbing and heating contractor in Minneapolis, Minn., died on Nov. 12. Interment was at Hartland, Wis.

Daniel H. Osborn

Daniel H. Osborn, member of the firm of Osborn & Klingberg, plumbing and heating contractor-dealers of Beloit, Wis., died suddenly of a heart attack in his home in that city on Nov. 27. He had apparently been in good health the day before and had worked at his office as usual despite the fact he had suffered a heart attack several days previous. He was 59 years of age. Mr. Osborn was very active in association work and was a past president of the Master Plumbers' Assn. of Southern Wisconsin and served for five years as secretary of this group.

Coming to Beloit 36 years ago, Mr. Osborn was first associated with the plumbing concern of Newton and Zimmerman, and later, when this firm dissolved, joined John Zimmerman, the firm becoming Zimmerman and Osborn. In 1919 Mr. Osborn formed a partnership with Martin A. Klingberg, the business of Osborn and Klingberg being formed.

In addition to his association work Mr. Osborn was very active in civic affairs and was a former Beloit alderman and a member of the standing committee on street lights and water works. About four years ago he took a leading part in the organization of the Beloit unit of the Wisconsin Taxpayers' Alliance, being named chairman of this unit. Mr. Osborn is survived by his wife, three sons, and three daughters.

A. J. Podmore

A. J. Podmore, treasurer and general manager of the Camden Pottery Co., Camden, New Jersey, died on Nov. 15. Mr. Podmore was considered one of the best practical potters in this country. He came from a family of English potters, and started in the pottery business as a modeler with Trenton Potteries Co. He joined the Camden Pottery Co. in 1905 in the capacity of superintendent, later becoming secretary, treasurer, and general manager, which position he held until his death.

Peter Kromdyke

Peter Kromdyke, president of the plumbing and heating business of Kromdyke & Son, Inc., 570 Portage St., Kalamazoo, Mich., died recently at the age of 76 after an illness of only a few days. Mr. Kromdyke was a member of the Kalamazoo Assn. of Master Plumbers.

New Trade Literature

American Foundry Issues Catalog

American Foundry & Mfg. Co., at 1015 Hebert Street, St. Louis, Mo., has issued a catalog showing its line of pipe fittings, grease traps, floor drains, lawn sprinklers, hydrants and like equipment. This book is designated as Catalog No. 45, General Edition.

Portable Tool Pamphlet

Skilsaw, Inc., 3310 Elston Avenue, Chicago, recently has brought out a folder covering the line of portable electric drills, saws, sanders, cleaners and similar equipment which this company makes. This folder is designated as Catalog No. 36, is about 30 pages in length, and contains an illustration of each item cataloged.

Folder on Tubular Products

Republic Steel Corporation, Massillon, Ohio, has just released a small, 16-page folder in two colors, listing and describing the various types of tubular products manufactured by this company.

Folder in Colors by Briggs

A folder has been made available by Briggs Manufacturing Company, of Detroit, Mich., showing in colors the line of bathroom and kitchen equipment which this company manufactures. The first page of the pamphlet shows what is described as an actual photograph, taken at the Zoo, Toledo, Ohio, of an elephant standing in a bathtub. The second and third pages, respectively, contain views in four colors of a modern kitchen and bathroom furnished with pressed steel equipment, while the fourth page of the folder features kitchen sinks included in this line.

Folder on Packings

Ehret Magnesia Manufacturing Company, of Valley Forge, Pa., has made available a pocket size folder containing information on its line of packings. Asbestos gasketings, rope and wick packings, metallic sheet packing and sheet packings of rubber and asbestos, and plastic packings are included in the products described.

Bulletin Describes Fitting for Welding

A circular from Taylor Forge & Pipe Works, P. O. Box 485, Chicago, Ill., tells of pipe fittings designed to be welded at the joints. This bulletin also announces a 64-page catalog which contains catalog information on these fittings, besides carrying illustrated data on the flexibility of piping installations. Also available from this company is a list of revisions for their Catalog 34-1.

25th Anniversary Folder Issued

The Porcelain Enamel and Manufacturing Co., of Baltimore, Md., has made available an eight-page folder measur-

OLD DUTCH is the only scratchless cleanser because it's made with SEISMOTITE

REG. U. S. PAT. OFF.

Few women understand that even the finest porcelain or enamel can't stay like new under the daily scratching of a gritty cleanser. Don't let them blame the plumbing—as they sometimes will—when it was really the cleanser that was at fault. Be safe. Recommend Old Dutch.

Remember, ordinary cleansers contain grit. Often this grit is so pulverized that it *feels* soft to the fingers. But it is *grit* just the same. Old Dutch, on the other hand, is made with Seismotite—thin, soft, flake-like particles that won't scratch.

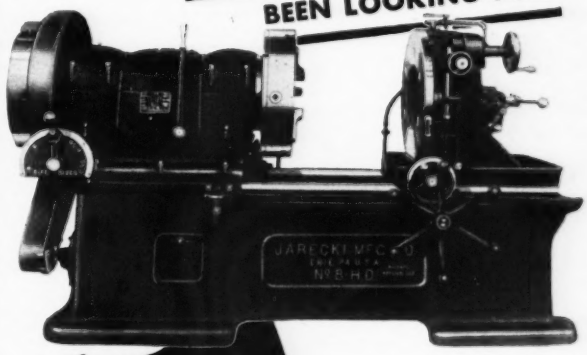
Here's a quick simple test that will prove this. Take two plates. Put a dab of Old Dutch on the back of one plate—a dab of any other cleanser on the back of the other plate. Now rub each dab of cleanser with a coin and listen. You can *hear* the ordinary cleanser scratch. But you can neither hear nor see any scratching from Old Dutch.

Your good reputation among your customers is safe in the hands of the Old Dutch Girl.

Doesn't Scratch

From EVERY STANDPOINT

THE PIPE THREADING MACHINE YOU'VE BEEN LOOKING FOR!



Features

One automatic self-opening die head covers complete capacity range.

One set of H. S. S. chasers threads complete standard range—changeable only for thread or pitch variation.

Chasers are easily and quickly changed. Screw-driver only tool required.

Chasers held in massive holders—no bushings.

Die-opening trigger automatically opens chasers at correct thread length.

Cutting off and chamfering at same operation.

Gears are steel-cut, running in oil. Hardened chrome-nickel steel wearing parts.

TIMKEN ROLLER BEARING equipped.

Sturdy construction—exceptional reliability.

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ing about 11 by 14 in. in size which describes and illustrates its plant, its methods, and its products. It is understood that the occasion for this booklet is the 25th anniversary of the company.

Pressure Mixing Valve Bulletin

Bulletin No. 140 is being distributed by Julian D'Este Sales Corporation, of Boston, Mass., in which are described this company's mixing valves for showers and other installations where the control of scalding hot water is necessary. A combination key stop valve and strainer also is presented in this folder. The bulletin is of eight pages, letter size, with orange illustrations on the front cover.

Enameled Ware Booklet Issued

An 80-page booklet of the loose-leaf type has been brought out by United States Sanitary Mfg. Co., located in the Arrott Building, Pittsburgh, Pa. This company's line of enameled ware is the subject of the booklet. Many types of sinks, bath tubs, lavatories and similar equipment are cataloged with illustrations, including some in full color.

Dunham Hand Book

"The Dunham Hand Book" is the title of a book just issued by C. A. Dunham Co., 450 East Ohio St., Chicago. The book serves as a catalog of this company's heating equipment, although it contains considerable general information which might class it as a heating manual. Various types of heating systems are discussed, with descriptions and illustrations of heating equipment, while some 50 pages at the back of the book are devoted to the presentation of engineering data.

New Manual of Arc Welding

The Hobart Brothers Co., located in Troy, Ohio, have just published what is described as a completely revised edition of their manual of arc welding, written by W. J. Chaffee. This has been issued under the title of "The New Arc Welding Manual and Operator's Training Course." It is about 95 pages in length, with a red, leatheroid cover.

This book carries information on the various phases of arc welding, including chapters on welding equipment, the weldability of metals and types of welds and joints. Sketches and photographs showing examples of welds, applications and methods of welding and types of welding equipment illustrate the book. A chapter on the strength of welds also is included which contains tables giving safe allowable static loads for welds with bare electrodes and the length of fillet welds to equal the strength of rivets.

Government Contracts Is Subject of Booklet

The Fidelity and Deposit Company of Maryland, located in Baltimore, Md., has brought out a revised edition of the booklet entitled "Matters of Procedure Under Government Contracts," by O. R. McGuire. This booklet is approximately 60 pages in length, with paper covers. Contracts with the Government are discussed in some detail, with considerable space being devoted to the details of making bids, settlement of claims and public work contracts.

New Contractors, Business Changes

Astoria, Ore.—Amy E. Laws has succeeded to the business of W. C. Laws & Co.

Camden, N. J.—James F. Connor Jr., has opened an office at 1364 Chesapeake Rd., Fairview, as a heating engineer and contractor.

Chicago, Ill.—The Normal Plumbing Co., formerly located at 818 W. 71st St., has recently moved to 613 E. 75th St. The business is run under the direction of A. D. Weinberg.

Los Angeles, Cal.—Shinn Brothers Co., composed of H. V. Shinn and A. M. Shinn, has engaged in the plumbing and heating business at 7673 Melrose Ave.

Los Angeles, Cal.—The H. F. Baldwin Co. has engaged in the plumbing contracting business at 126 S. La Brea. The business is under the management of Homer F. Baldwin.

Los Angeles, Cal.—The Koeger Plumbing Service has engaged in business at 3461 Virginia Rd., under the management of J. A. Koeger.

Memphis, Tenn.—The Lancaster and Lee Plumbing and Heating Co. has moved its business to the company's new quarters at 2215 Central Ave. H. W. Lancaster and Boyd Lee head this concern.

San Francisco, Cal.—James Bean has moved his plumbing and heating business from 2426 Castro to 2408 15th St.

San Francisco, Cal.—William Kelley has opened a new plumbing and heating shop at 1338 Pierce St.

San Francisco, Cal.—Carl T. Seipp has engaged in the plumbing and heating business at 942 Pacific Ave.

San Francisco, Cal.—George E. Rose has moved his plumbing and heating business from 209 Post St. to 49 Geary St.

Convention Dates

Dec. 13-14 — Wholesale Distributors Assn. of Texas.—Joint meeting of manufacturers and wholesalers of plumbing and heating products in Austin, Tex., with headquarters at the Stephen F. Austin Hotel.

January 14-16, 1936—Illinois Master Plumbers' Assn. — Forty-third annual convention in Chicago, Ill., with headquarters at the Congress Hotel.

January 25, 1936—Pennsylvania State Assn. of Master Plumbers.—Second midwinter meeting at Bethlehem, Pa., with headquarters at the Bethlehem Hotel.

January 27-31, 1936.—Fourth International Heating and Ventilating Exposition, in Chicago, at the International Amphitheatre.

January 27-31, 1936.—A. S. H. V. E.—Forty-second annual meeting of the American Society of Heating and Ventilating Engineers, in Chicago, at the Palmer House.

January 28-30, 1936.—Winter convention of the National Warm Air Heating and Air Conditioning Assn. in Chicago, Ill., with headquarters at the Hotel Stevens.

February 3-4, 1936.—Annual convention of the Minnesota Master Plumbers Assn. at Minneapolis, Minn.

February 10-12, 1936.—Annual convention of the Ohio State Assn. of Master Plumbers in Dayton, O., with headquarters at the Dayton Biltmore Hotel.

April 14-18, 1936—Twelfth National Oil Burner Show.—To be held at Convention Hall, Detroit, Mich.

April 14-18, 1936—Oil Burner Institute.—Annual convention to be held in Detroit in connection with the Oil Burner Show.

May, 1936.—Michigan Assn. of Master Plumbers—1936 State convention at Detroit, Mich. (Exact date of convention to be selected later.)

May 12, 1936—South Carolina Master Plumbers' Assn. — Annual convention in Florence, S. C.

May 18-20, 1936—Pennsylvania State Assn. of Master Plumbers.—State convention at Allentown, Pa., with headquarters at the Americus Hotel.

May 25-28, 1936—California State Master Plumbers' Assn.—Annual convention at Del Monte, Calif., with headquarters at the Hotel Del Monte.

June 16-19, 1936.—Annual convention of the National District Heating Assn. at Grand Rapids, Mich., with headquarters at the Pantlind Hotel.

October 12-18, 1936 — A. G. A. — Eighteenth annual convention of the American Gas Assn. in Atlantic City, N. J. (Alexander Forward, managing director, 420 Lexington Ave., New York City.)

Women

Conducted by . . . Dorothy Edwards

Work for Women

● *National Sanitation Chairman Mrs. J. J. Corcoran tells how every auxiliary member can be of important assistance in sanitation work*

All members will want to read this inspiring call for action which has just been issued by Mrs. J. J. Corcoran of Jersey City, N. J., national sanitation chairman. Her message reads:

During the last year since the sanitation work of the women's auxiliary has become national in scope, those who are taking an active part in it cannot have failed to observe that there is a tremendous amount of work to be done and that the logical ones to do it are the members of the auxiliary.

Mrs. J. J. Corcoran, of Jersey City, N. J., chairman of the sanitation committee of the Women's Auxiliary to the National Association of Master Plumbers

We are in a position to be aware of the effect on the health of the community which can be caused by insanitary conditions in the often overcrowded and wholly inadequate lavatories and rest rooms of our public places and private workshops and, worse still, by the total lack of them in places where one would most expect to find them—notably lunch counters and eating places in stores or shops where food is prepared and served. In a surprisingly large number of such food-dispensing places there are no toilets or lavatory facilities of any kind.

This is a condition which every member of the auxiliary should strive to have remedied by reminding the managers or owners of these places that, by installing and maintaining in a clean, sanitary condition a rest room or lavatory, he would be rendering a service not only to his patrons but to himself, as increased business would result. This has actually happened since we started this campaign.

So let us be up and doing, not forgetting to enlist the interest of our friends and neighbors and also our local newspapers, until we have brought home to our communities the conviction that only by perfection in sanitation can we achieve perfect health.

Open Meeting

● *Membership and sanitation are important subjects at enthusiastic New York gathering*

A good portion of the New York State auxiliary executive board as well as a large number of members from New York City and vicinity and guests from New Jersey responded to the call for an open meeting issued by State President Mrs. William Metcalf, of Rockville Center, L. I., the meeting being held on Nov. 6 at the headquarters of the Brooklyn Auxiliary.

National Director and Past State President Mrs. J. O. Stapf, of Albany, was unable to be present. However, a stimulating message from her was read.

A favorable vote was taken on the suggestion of Mrs. Stapf to offer a prize of $10 to the local auxiliary with the largest increase in membership during the season.

Sanitation, the important activity of the state, was stressed from many angles. All were urged to concentrate on one angle, namely, stores with tea rooms or lunch counters which do not have lavatory facilities or rest rooms. New Jersey State Sanitation Chairman Mrs. Henry Bunker, Jr., of North Hudson, gave some interesting sidelights on this work as did also Mrs. Charles Zimmermann, of North Hudson, N. J.

National Third Vice President Mrs. J. Miller Heidweiler of Trenton, N. J., brought a message from the National auxiliary, concluding with a poem, apropos the sanitation work of the auxiliary.

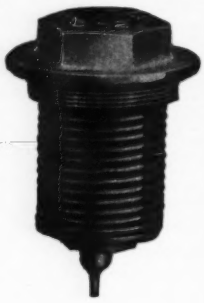
Other New Jersey leaders who spoke briefly were State President Mrs. John Conard, of Trenton; State Vice President Mrs. Louis Komoski, of Jersey City; Mrs. Clyde Cole, of North Hudson, State trustee and president of North Hudson auxiliary, Mrs. N. Triani, of North Hudson, and Mrs. J. J. Corcoran.

The following New York State officers also made a few timely remarks: Vice Presidents Miss Alice Roth, of Bronx, and Mrs. Jacob Stockinger, of Queens, Secretary Mrs. William Bloeth of Rockville Center, and Treasurer Mrs. E. Pautsch, of Brooklyn.

The various methods of bringing the membership out to the meetings were discussed by the following local auxiliary presidents: Mrs. M. J. Kennedy, Brooklyn; Mrs. John Sharp, Manhattan; Mrs. William McNaught, Far Rockaway and vicinity, Mrs. Henry Billharz, Queens; Mrs. E. Seltzer, Nassau County; and Mrs. W. Ebner, Bronx.

The singing of the "Star Spangled Banner" at the opening of the meeting was led by Mrs. Al. Nacman, accompanied by Mrs. E. Abrams.

In the Ansonia Hotel, New York, an old steam heating system was made equal to new by equipping all radiator traps and inlet valves with Sarco Adapters.



These consist of replacement units which can be screwed into old trap and valve bodies of any make without disturbing piping connections.

Sarco Adapters

eliminate hammering noises at once. Radiators heat up more quickly, and ample steam can be fed to all parts of the system at greatly reduced steam pressures.

The result is not only guest or tenant satisfaction, but a saving in fuel dollars which quickly pays for the work of modernization.

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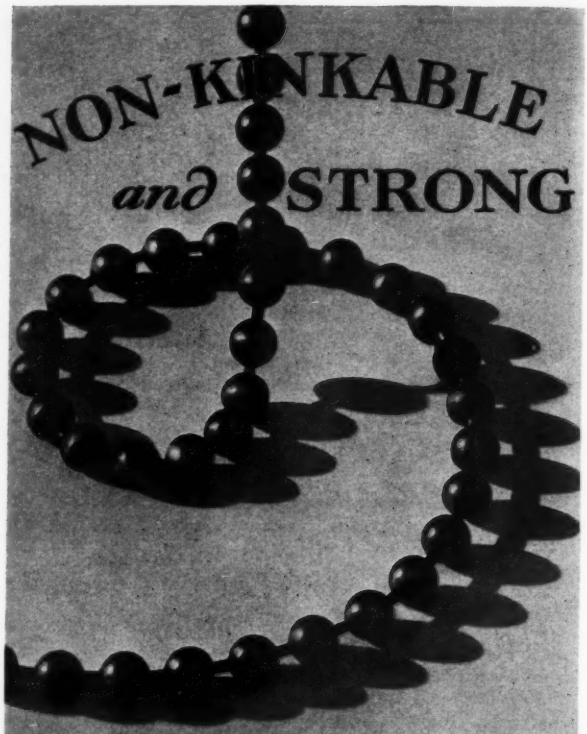

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Jersey Board

● *State officers are guests at party given by Orange Auxiliary*

The Orange, N. J., Women's Auxiliary entertained the New Jersey State Board at its first meeting on Oct. 28, when it staged a very delightful party at the picturesque Palmer House in East Orange.

Representatives from the five local auxiliaries were present and an almost 100 per cent board responded to the roll call, illness in the family preventing the attendance of Mrs. Clyde Cole, trustee.

Mrs. John Conard, N. J. State president, who presided

President Mrs. John Conard, of Trenton, presided. State Secretary Mrs. John Wouters, of Trenton, presented the correspondence, bills and similar matters and Treasurer Mrs. John Heyrich, of Montclair, reported on the financial status of the organization.

Leaders Talk

The two national leaders—Third National Vice President Mrs. J. Miller Heidweiler, of Trenton, and National Sanitation Chairman Mrs. J. J. Corcoran, of Jersey City—were introduced. Mrs. Heidweiler told briefly of the entertainment features at the national convention in Chicago last June. Mrs. Corcoran outlined plans for the year's sanitation work.

Junior Past President Mrs. Henry Williamson, of Montclair, was reappointed custodian of the funds for sending the president to the national convention, and it was voted that each local would conduct a card party or similar affair to build up this fund.

State Sanitation Chairman Mrs. Henry Bunker, of Union City, reported briefly and distributed the forms received from Mrs. Corcoran for recording progress of sanitation work. President Mrs. Conard told of having had sanitary conveniences provided for a lunch wagon through her efforts, and many instances of insanitary rest rooms or of lack of rest rooms were cited by members. Plans for the organization of more auxiliaries in the state were discussed.

The Jersey City auxiliary extended an invitation to the board for its next meeting.

After the meeting the members were joined by their husbands and dinner was served. National Vice President George Werner, of Orange, with Mrs. Werner were guests of honor at the dinner. Other New Jersey association leaders present were Past Presidents George Bird, of Elizabeth, and James Lewis, of Newark, also Third State Vice President George Brenner, of Orange. Cards occupied the attention of the guests during the evening.

St. Petersburg Visitors

At its meeting on Nov. 28, the St. Petersburg auxiliary was pleased to have as its guests National Director Mrs. Foster R. Fanning, Mrs. W. E. McAndrew, past national president and present chairman of sanitation for the State of Florida, Mrs. George McGahn, southwest district vice president, Mrs. H. B. Perryn, and Mrs. James Scott. After the business meeting of the St. Petersburg auxiliary had been completed, a district meeting was called to order by State President Mrs. Lee R. Sheffield and a number of matters of importance were discussed.

The St. Petersburg auxiliary has adopted the custom this year of having a dinner for each member as her birthday arrives, the men being invited to participate. The most recent celebration was on the evening of Oct. 14 when the ladies and their husbands gathered for a dinner in honor of Mrs. C. M. Hancock's birthday. The dinner was held in the colorful Gypsy Inn, those attending being: Mr. and Mrs. C. M. Hancock, Mr. and Mrs. Lee R. Sheffield, Mr. and Mrs. W. D. Cameron, Mr. and Mrs. John Dalton, Mr. and Mrs. L. R. McCarthy.

Greetings

The National Office of the Women's Auxiliary wishes each and everyone of our auxiliary members a VERY MERRY CHRISTMAS and a MOST HAPPY AND PROSPEROUS NEW YEAR. May the ship that comes to your harbor be filled with a cargo of health, happiness and success.

Mrs. Frederick C. Kuetemeyer,
National President.
Mrs. Jos. J. Mueller,
National Corresponding Secretary.

Milwaukee Benefit

The Women's Auxiliary of the Milwaukee Master Plumbers Association held their annual pivot pillow case card party in connection with a bake sale Friday evening November 8, at the Elks club.

This was a benefit card party, as usual, therefore the proceeds from the sale of tickets will be used for Thanksgiving and Christmas baskets for the needy. The party was a big success, due to the loyal support and cooperation from all of the members.

Orlando Dinner

Auxiliary members and master plumbers of Orlando, Fla., were entertained at a dinner in the home of Mr. and Mrs. Chas. Riecken on Oct. 29. After dinner, a business session was held at which plans for work to be done during the current season were discussed. It was agreed that Tuesday night would be the most convenient night for meetings.

The auxiliary heartily endorsed the plan of having cards printed to aid in the sanitary work of the State. A gift of appreciation was presented to Mrs. Riecken by the auxiliary members.

'Frisco Birthday

Marking the founding of their organization in 1896, the ladies of the San Francisco Auxiliary of the Master Plumbers Association met at a delightful luncheon party at Ye Towne Club on O'Farrell street, Oct. 15. Tables were tastefully decorated with lanterns and flowers in black and yellow, following out the Hallowe'en motif. There were five tables of whist, which yielded high scores to President Mrs. William J. Monihan, Mrs. J. Di Vecchio, and Mrs. Lena Sand, who for 15 years has served as auxiliary secretary-treasurer.

There was one charter member present, Mrs. Charles Mayer.

Another party, one of the largest of the season, was enjoyed in October, when members of the San Francisco Master Plumbers' Assn., their wives, friends and a liberal sprinkling of local representatives of manufacturers met for their annual get-together party. There were 30 tables of whist.

Newton Activities

A meeting of the Women's Auxiliary of the Newton Master Plumbers' Assn. was held on Nov. 13 at Bond's Restaurant in Watertown, Mass., with Mrs. R. F. Leahy as hostess. After dinner, a lengthy meeting was held. After the business session, whist was played, honors going to Mrs. Niels Jepsen and Mrs. Fred Perkins.

Jacksonville Entertains

Mr. and Mrs. Foster E. Fanning of Winter Park were recently entertained by the Jacksonville Association of Master Plumbers and its auxiliary in the Odd Fellows club in that city. Mr. Fanning is president of the Florida State Association of Master Plumbers and is on a tour over the state visiting the different local organizations.

During the evening the women held an informal meeting and Mrs. Fanning gave an interesting talk on the national convention of master plumbers proceedings, also giving several worth while suggestions to be followed during the year.

Mrs. Fanning was presented with a lovely gift as a memento of the occasion. Later in the evening a buffet supper was served the table being beautifully arranged with a lace cloth and fall flowers.

Mrs. W. E. McAndrew of Tampa, past president of the Women's Auxiliary to the National Assn. of Master Plumbers and also past president of the Women's Auxiliary to the Florida State Assn. of Master Plumbers, was the honor guest at another party given recently by the Jacksonville auxiliary which was held in the home of Mrs. T. H. Thompson in Lakeside Park.

During the evening the guests enjoyed several games of bunco and Mrs. McAndrew was presented with an attractive hand-made bag in honor of the occasion.

El Paso Party

On Nov. 8, the El Paso Women's Auxiliary held its annual bridge and bunco party at the Hotel Paso Del Norte. Two hundred and sixty-five guests enjoyed the evening.

All auxiliary members acted as hostesses for the evening and Mrs. A. J. Fraser and Mrs. A. A. Powell were chairmen of arrangements. Mrs. John Warden had charge of refreshments and Mrs. Hart Steele of tickets.

Boston Xmas Work

On Nov. 18, the Women's Auxiliary of the Boston Association of Master Plumbers held a luncheon and bridge at the Richardson Shop. This was in aid of the Christmas fund but due to the inclement New England weather not much of a return was realized.

The monthly meeting of the auxiliary was held at the Green House Inn, Brookline, Mass., on Tuesday evening, Nov. 19. Mrs. Joseph Gordon was the hostess. The meeting was well attended by the members and the master plumbers.

It was moved that in order to supply baskets for the needy at Christmas time that each woman would donate something in the way of canned goods, cakes, candies, etc., in order to make up two or three baskets. Everyone readily assented to this. Money will also be sent to the U. S. Veterans Christmas stocking fund. The Boston Post Santa also will receive a donation to help his cause along.

In order to raise money for the treasury all ladies are busily engaged in making squares on which tulip cotton pieces are stitched.

The next meeting will be held on Dec. 18 in the form of a Christmas Party at the home of Miss Mary Cleary.

Kansas City Activities

The Women's Auxiliary to the Master Plumbers' Assn. of Kansas City is adding to its remarkable record of activities during the current year. The auxiliary has recently given to the Lathrop Trade Institute, a school sponsored by the Kansas City Board of Education, six copies of standard plumbing textbooks and also drawing supplies. In addition, for the seventh consecutive year the auxiliary has made its contribution of 176 new garments to the Kansas City branch of the American Needlework Guild.

Two excellent card parties have been held recently.

Queens Barn Dance

A gay barn dance, with all the trimmings and diversions, was the means of raising funds to be used for Thanksgiving baskets for the poor by the Queens (New York City) women's auxiliary. The affair, held at Masonic Temple, Forest Hills, L. I., on Saturday evening, Nov. 2, was participated in by more than 200 merrymakers.

Weddings were performed at nominal rates per service and a charge was made for all refreshments as well as for penalties, which were numerous.

The regular meeting of the Queens auxiliary was held at the Knights of Columbus Hall, Jamaica, on Nov. 6.

Eighth Anniversary

The Rock Island-Moline Auxiliary to the Master Plumbers, celebrated its eighth anniversary with a luncheon bridge at the Harper House in Rock Island.

The guest of honor was Mrs. Fred Hager, of Chicago, State president of the auxiliary who gave a talk on the work of the auxiliary. Bridge was played during the afternoon.

The next meeting will be held Dec. 9 at the home of Mrs. James Cunningham in Rock Island and will be a Christmas party for the members.

Nassau Masquerade

Beautiful, humorous and original were the costumes worn by the members and guests at the annual masquerade ball of the Nassau County (N. Y.) Women's Auxiliary, held at Odd Fellows Hall, Hempstead, L. I., Saturday evening, Nov. 16.

Mr. and Mrs. William V. Mizotta won honors for the most beautiful costumes, while Mrs. William Metcalf, New York State auxiliary president, and Winthrop Beardsley, were named as winners in the contest for the funniest get-ups.

About 200 participated in the gala affair, including guests from Bronx, Brooklyn, Queens and other surrounding sections. George Arnone, vice president of the New York State Master Plumbers' Assn., and M. J. Kennedy, president of the Greater New York association, with Mrs. Kennedy, were among those who enjoyed the occasion.

No. Hudson Party

With 132 present, the fifth annual card party of the Women's Auxiliary to the North Hudson, N. J., Master Plumbers' Assn., Inc., held Nov. 6 at Doric Temple, Union City, N. J., was a huge success.

Among the notable visitors on hand were Mrs. J. M. Heidweiler, Trenton, national treasurer; Mrs. John J. Corcoran, Jersey City, national sanitary committee chairman; Mrs. John Conard, Trenton, president of New Jersey Women's Auxiliary; and Edmund P. Ingram, Jersey City, president of the New Jersey State Master Plumbers' Assn.

After the card playing, refreshments were served.

Albany Reports

The Womens Auxiliary to the Master Plumbers Association of Albany, N. Y., held its first meeting of the fall season, in the master plumbers rooms, all members being present. Two new members, Mrs. Cooper and Mrs. Cohen were taken in at this meeting.

The chairman of the sanitation committee reported visits being made to department stores, comfort stations, and rest rooms. Several instances of insanitary conditions were found and the attention of the owners has been called to them.

At this meeting the nominations were made for officers next meeting. November 21, officers will be installed. The hostesses for the evening at this meeting were Mrs. Andrew Ryan, Mrs. William Cassidy, and Mrs. Anthony Decker. A buffet lunch was served.

A Hallowe'en party was held in the form of a dinner and dance on October 30. This was a great success.

Products

New Developments . . . Assist Contractor-dealers . . .

Thermostatic Mixing Valve

The upper left illustration in the group below shows a cut-away view of a new mixing valve, described as being of all brass construction.

The manufacturer sets forth the operation of this valve as follows: Hot water enters at the top, cold water at the side, the flow of each being controlled by a thermostatic element which the water strikes after the two streams have been mixed. It is understood that the outlet temperature may be regulated between 120 and 160 deg. Fahr. by removing the cap at the bottom of the valve and by turning the screw to the left for higher and to the right for lower temperatures. The maker explains that hot and cold water pressures should be nearly equal for best operation.

Excelso Products Corporation, located at 65 Clyde Ave., Buffalo, N. Y., makes this mixing valve.

New Type Shower Head

Shown in the upper right illustration is a shower head which has just been placed on the market.

The feature listed for this shower head is that it is made with an elliptical outlet for giving an easily directed, uniform spray of water. It is described as being constructed of solid brass, chromium plated. A ball joint is provided which is designed to give an adjustment to any angle.

The manufacturer is Crane Co., 836 S. Michigan Ave., Chicago, Ill.

New Sawing Vise Set

Shown in the accompanying illustration is a tool for cutting thin walled copper or brass tubing.

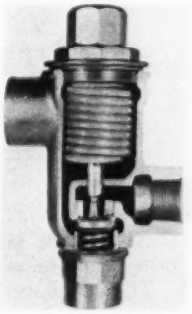
This new tool is described as assuring a perfectly square cut for sweated or finely threaded fittings. Included in the manufacturer's description is the statement that this equipment holds the tube in a round position and sizes it while the cut is being made, and that it brings distorted tubing back to round. It is understood that this tool may be bolted to a bench or used on the job as a hand tool.

This new sawing vise set is a product of Trimont Mfg. Co., located at Roxbury, Mass.

New Water Heater

At the extreme lower right is shown a view of a water heater which is described as being an entirely new type.

It is understood that this heater consists of a hollow jacket which is made to be placed around any range boiler. According to a description of the unit, the inside surface of this shell is highly polished with the idea of forming a reflector for projecting the heat generated by a small gas flame against the walls of the range boiler. It is stated that the flame is contained in a burner box at the bottom of the unit, while brass tubes are built into the jacket for carrying off the products of combustion The heat reflecting chamber is closed and insulated at the top. The installation of this equipment is described as consisting of placing the shell around the range boiler,

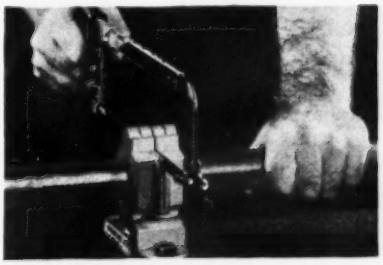


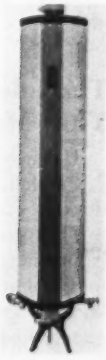
Mixing valve

New type shower head

New water heater

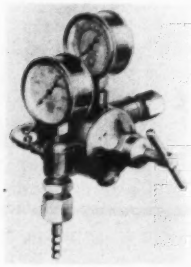
New sawing vise set



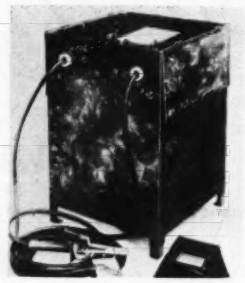


connecting a ⅜ in. gas line, and attaching a pressure regulator and thermostat.

This is a product of Handley Brown Heater Company, located at Jackson, Mich.



Heavy-duty regulator



Portable arc welder

Heavy-Duty Regulator

The regulator shown in the accompanying illustration has been designed for the delivery of large volumes of oxygen at relatively high pressures, such as may be encountered on heavy cutting and similar jobs.

This equipment is described as operating on a feedback principle, and is said to be especially applicable where the oxygen demand per regulator is in excess of 1,000 to 1,200 cu. ft. per hour. Maximum operating pressure is listed at 200 lb. per sq. in. Maximum delivery capacity, at 100 lb. pressure or greater, is rated at 3000 cu. ft. per hour.

Air Reduction Sales Company, located on 42nd St., opposite Grand Central, New York City, is the manufacturer.

Portable Arc Welder

Shown at the right above is a portable arc welding machine which, just recently, has been announced.

This unit is described as an improvement over an earlier model and has been designed for the welding of light weight metals. It is listed as being capable of welding metals down to 26 gauge steel. The equipment is listed as being made in three sizes, 15 to 150 amp., 15 to 275 amp. and 15 to 90 amp., operating on 220 volts, 60 cycle, single phase.

Miller Electric Mfg. Co., Inc., of Appleton, Wis., makes this welding equipment.

Threader for Thin Metal Tubes

The accompanying illustration shows a new stock and die which is described as being especially designed for threading thin metal tubing.

The principal feature, according to the manufacturer, is an internal expansion bushing guide which is intended to fit tightly inside the tubing. The idea is that the bushing guide should be inserted into the tube approximately its full length and then expanded against the walls of the tube by turning the nut at the outer end of the draw bolt. This is said to lock the stock and die onto the tubing in perfect alignment. It is understood that this stock and die are part of a set which consists of one die and one expansion guide for each cutting size, and one stock. The dies, as regularly furnished, are listed as being 27 thread, right-hand.

Greenfield Tap and Die Corporation, Greenfield, Mass., makes this equipment.

New Shower Fixture

The shower fixture shown at the right below features what is listed as a new type of shower head.

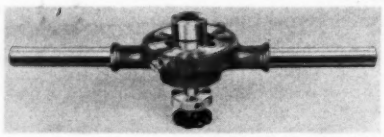
This item is described as having been designed to fill the need for a small, self-cleaning head with a concealed volume control. It is understood that this head may be furnished either in the ball joint or rigid type, and that the rigid type also is available without volume control. Also, it is understood that this shower fixture is equipped with an automatic trip which closes when the water is turned off, so that when the water is turned on again, the flow is through the tub spout, thus making it necessary each time, to raise the shower control handle in order to turn on the shower.

Hays Mfg. Co., located in Erie, Pa., makes this fixture.

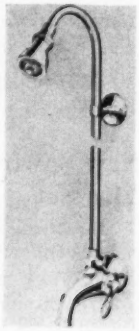
Expansion Joint Announced

In the lower left illustration is shown a view of what is referred to as a new packless expansion joint.

The manufacturer describes this equipment as being based on an entirely new principle for controlling pipe expansion in steam and hot water lines. Further, the expansion element is indicated to be a series of die-formed U-rings of stainless steel, welded together without transverse seams. The body of the joint is designed to enclose completely the expansion element and to protect it from damage and dirt. The joint is listed as being available for pressures up to 400 lb. and temperatures to 800 deg. Fahr., with flanged ends or beveled ends for welding di-

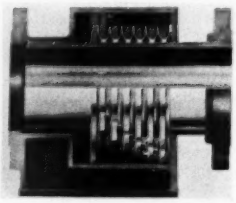


Threader for thin metal tubes

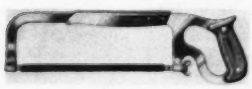


New shower fixture

New expansion joint



New hack saw blade



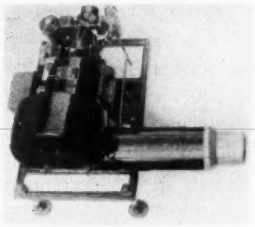
rectly into the pipe line. It is understood that the normal range of transverse available is 1 in. to 8 in.

This item has been placed on the market by American District Steam Company, North Tonawanda, N. Y.

Hack Saw Blade

At the lower right hand corner of the preceding page is shown what is described as an improved type of hack saw blade, the feature of which, according to its manufacturer, is the undercutting of the teeth. This is said to be adapted after the design of a milling cutter. This hack saw blade is made by The Forsberg Manufacturing Company, of Bridgeport, Conn.

Electric unit heater



New oil burner

Electric Unit Heater

Shown in the accompanying illustration is an electric heater which recently has been placed on the market nationally.

Described as the outstanding feature of this unit is the cast-in electric heating unit. This is said to be of the resistance type, cast integrally with an aluminum fin type grid. This unit is designed to operate with a maximum temperature of 250 deg. Fahr. It is understood that this heater is available in various sizes in both rectangular and round shapes.

The heating unit described above is being marketed by Electric Air Heater Company, Division of American Foundry Equipment Company, Mishawaka, Ind.

Oil Burner Announced

A recently marketed oil burner for domestic heating is pictured shown above at the right.

Features mentioned for this oil burner include an adjustable flame, a safety cover completely encasing the burner, floating mountings consisting of springs and felt, a motor speed of 1150 r.p.m. and a muffler type of air tube. The outstanding feature of this equipment is described as centering about an especially constructed air tube which incorporates adjustable air diffuser blades and a whirling chamber. The purpose of this design is to create a uniform flow of turbulent air, the whirling pitch of which may be adjusted so as to regulate the shape of the flame independently of the amount of air or oil used.

Kraemer & Meyer, 412 Bloomfield Ave., Bloomfield, N. J., have brought out this equipment.

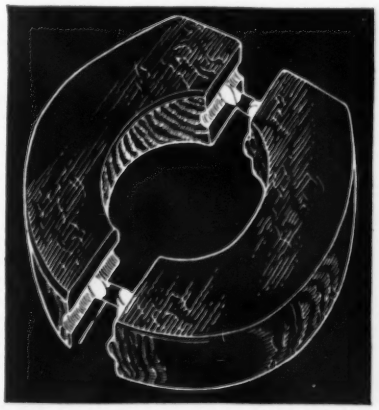
UP! THE IS ON BUSINESS

Wherever you go these days you hear of plans for a bigger building program in 1936! Just how far these plans may develop is still a matter of conjecture, but the fact remains that people are PLANNING, building is on the "up," and there's lots of remodeling and modernizing of old homes. . . . This means better business for plumbers, and especially for those wide-awake plumbers who get out and merchandise their wares.

Now, if ever, is the time to merchandise Never-Split seats! Talk their superior construction, their variety of beautiful and durable finishes, their worthwhile investment. Architects, builders, and home owners are willing to listen, and the sale of Never-Split seats often leads to other sales, and extra profits. It will pay you, now, to have samples of Never-Split seats to show and to sell!

NEVER-SPLIT Offers a Complete Line . . . .

The durable Never-Split varnished and sprayed finishes will satisfy your greatest demand. Never-Split scientifically built Sheet Covered seats, all hand covered, will please your more discriminating trade. And EVERNU hard rubber seats (patented) are your entering wedge in selling contract installations to schools, hotels, hospitals and all other public buildings.



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Note: Never-Split has always sold its products only to recognized Wholesalers of Plumbing Supplies who confine their sales to Plumbing Contractors of good standing. You may be assured that this 32-year-old policy will continue!

This section gives a report of the latest news of selected automatic heat and air conditioning products. Sales helps such as these work to open up new and increasing markets for dealers

Four Port Venting Valve

The manufacturer of the radiator valve shown in the accompanying illustration states that this valve features an adjustable port device for controlling individual radiators.

It is understood that this valve has four venting ports, graduated in size, which may be adjusted by a cap at the valve top. The purpose of thus adjusting the radiator valves is to permit the radiators distant from the steam source to be heated as quickly as those close by. It is pointed out that the principle involved is merely that of retarding the venting rate of nearby radiators by adjustment to the smaller ports, and increasing the venting area as the distance of the radiator from the boiler increases. It is further pointed out that this type of valve is especially applicable to oil or gas fired systems, inasmuch as it allows the retardation of radiators located in the same room with a thermostat and the augmenting of those more distant.

W. A. Russell & Co., 1734 Grand Central Terminal Bldg., New York City, is the manufacturer of this valve.

Low Water Control

Described as a combined low water and pressure control, the item shown in the lower left illustration features compactness and durability.

A copper float is incorporated in this instrument which is designed to actuate a switch, shutting off the heating system, in the event that the water in the boiler reaches a dangerously low level. Regarding the pressure control function of the unit, the standard pressure range is given as 0 to 14 lb., minimum differential 1 lb.

This is a product of The Mercoid Corporation, 4201 Belmont Ave., Chicago, Ill.

Year Around Air Conditioning Unit

The illustration at the lower right shows what is described as an air conditioner designed for combined systems of radiation heating and winter air conditioning, including a tankless domestic hot water supply.

This type of system is said to supply conditioned warm air through ducts to certain rooms, while other rooms are heated by steam radiators or convectors. It is stated that this unit is made in sizes suitable for residences and similar buildings, and may be used in structures now having duct systems as well as in new buildings. It is understood that provision is made for the addition of cooling and dehumidifying equipment at any time. According to the manufacturer, an oil burner supplies heat for generating the steam, part of which is directed to radiators and part to fin-type transfer coils in the air conditioning chamber. A centrifugal blower is provided for circulating the air. It is stated that air cleaning and humidification are provided for by replaceable filters and an evaporating tray which is mounted on the boiler shell. What is described as a submerged tankless heater is included in the unit for the purpose of supplying domestic hot water the year around. Control is by means of a room thermostat.

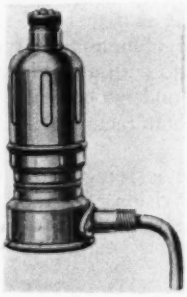
This equipment is manufactured by May Oil Burner Corporation, of Baltimore, Md.

New Electric Switch

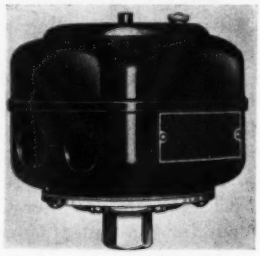
A new control described as applicable for pump and air compressor service up to 80 lb. maximum pressure is illustrated in the accompanying photograph.

It is understood that this switch is regularly available tapped for a ¼ in. standard pipe thread pressure connection, but that it also may be provided tapped for ⅛ in. or ⅜ in. connections. An overload mechanism of the bimetal type is a part of this switch which is rated for ¼ h.p., D.C.; 1 h.p., single phase A.C., 110 volts; 2 h.p., single phase A. C, 220 volts.

Announcement of this switch has come from Penn Electric Switch Co., Des Moines, Iowa.

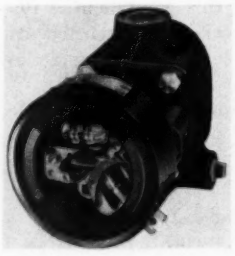


Four port venting valve

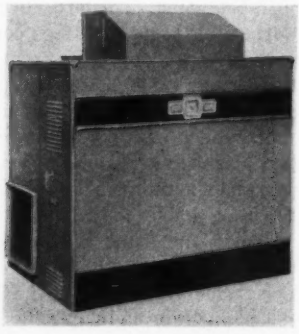


New electric switch

Low water control



Year around air conditioner

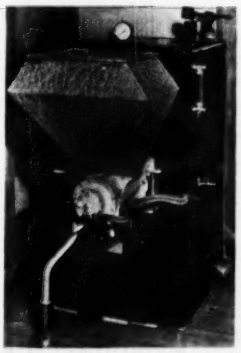


Announces Water Operated Stoker

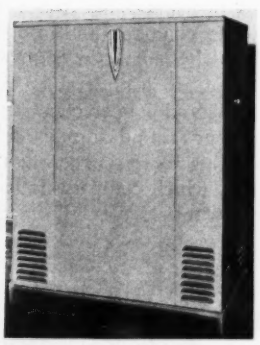
Described as a water operated coal stoker, the equipment shown in the cut at the left is said to be applicable to rural installations, where pressure water supply systems are available, as well as to city installations.

One of the features listed for this stoker is that only nine moving parts are included in its construction. A flapper check valve, similar to the type used in the vacuum tank of the ordinary gasoline engine, is said to control the inlet and outlet water simultaneously. A description of the firing action of this stoker indicates that slightly less than a quarter of a pound of coal is delivered at each stroke of a piston, the length of stroke of which is only ¾ in. It is understood that the stroking speed of the piston may be varied from one stroke per minute to one stroke in twenty minutes. Each delivery of coal is said to be preheated before it is discharged finally into the furnace. The maker points out that firing takes place through the regular fire door opening of the furnace.

Mechanical simplicity, silence of operation and ease of installation are features listed for this equipment, which is made by The American Home Stoker Company, Builders Exchange Building, Cleveland, Ohio.



Water operated stoker



Automatic oil boiler

Automatic Oil Boiler

The illustration at the right shows a view of an improved boiler which has been designed exclusively for automatic firing with oil.

The manufacturer lists several features for this boiler, including a tubular element with an independent shell containing what is described as a liberal amount of heating surface to remove the maximum heat before the gases pass up the chimney, a simplified assembly arrangement, easily accessible connections and removable end panels for giving access to the burner. Heat exchanger tubes are listed as being 2 in. in outside diameter, and are said to be expanded into the tube sheets. It is understood that this boiler is available in four sizes, the rated steam radiation for each being 750 sq. ft., 1000 sq. ft., 1250 sq. ft. and 1500 sq. ft. The casing of the unit is described as being finished in jade green baked enamel.

Davis Engineering Corporation, of Elizabeth, N. J., makes this equipment.

Stop Watching the Waterline

No. 4 Duplex Strainer and Fittings
No. 545 Genuine Detroit Low Water Cut-Out
No. 85-F WATER-BOY Safety feeder
No. 7 AUTO-VENT Air Eliminator For water lines and tanks.
No. 60 Tri-Safety Relief Valve. (For hot water heating)
No. 53 WATER-BOY (with fittings) for hot water radiator.
Automatic humidifier. for gravity steam
No. 200 Auto-Vent Air Relief Valve for hot water radiator.

A Popular Priced
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The No. 855FC combination consists of an improved WATER-BOY safety feeder, a Detroit low water cut-out (listed as standard by the Underwriters' Laboratory) and all fittings to connect to gauge glass openings except 5/8" copper tubing.

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A fast working powdered boiler repair that will work when all others have failed.

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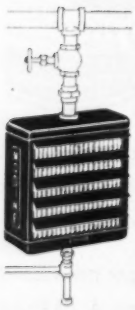


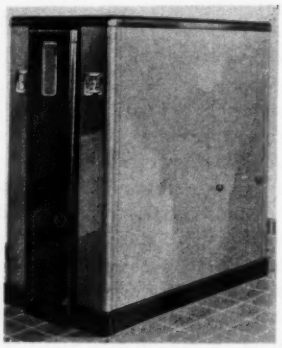
The Downing Box Co., Milwaukee, Wis., has installed 26 Modine Unit Heaters to replace 35 tons of direct radiation. While the Modines weigh but 1 2/3 tons they heat additional spaces which the old system did not.

Modines cut factory production costs by lowering factory heating costs. The saving in fuel costs alone is from 13½ to 25 per cent.

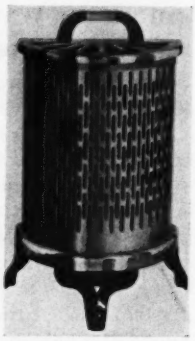
The Downing Box Co., plant requires heat from October first until June. Direct radiation wasted fuel. It kept the plant too warm in mild weather. In cold weather, wall and ceiling areas were over-heated in a vain attempt to warm up cold spots in working zones. And the necessity of stacking raw materials along the walls rendered the wall radiation ineffective.

Overhead and out of the way, Modines waste no valuable space. They deliver the heat downward to the floors and working zones where it is needed. Heat is evenly distributed, and temperature thermostatically controlled. A unit need be operated only when the area it serves requires heat. No fuel is ever wasted. It costs the contractor less to install Modine than any other unit heater. Why? Write for New Catalog, No. 635, Modine Manufacturing Company, 1760 Racine St., Racine, Wisconsin.

MODINE MANUFACTURING COMPANY
HEATING, COOLING AND AIR CONDITIONING FOR INDUSTRIAL, COMMERCIAL AND DOMESTIC APPLICATION



Oil burning boiler



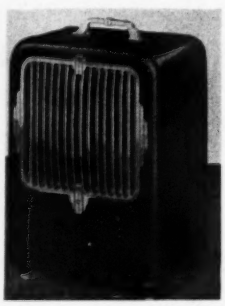
Electric heater

Oil Burning Boiler

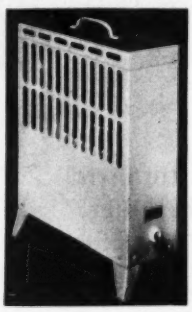
Ease of installation and attractive appearance are features mentioned for the oil burning boiler shown at the left above.

The oil burner which is a part of this unit is described as being of the pressure atomizing type. Combustion takes place in a refractory lined chamber which, it is understood, is completely surrounded by a water leg. From here the hot gases are intended to pass through a bank of horizontal fire tubes which are located in the main water chamber, and into the smoke hood. Draft is regulated by a built-in control which is listed as being automatic. It is understood that an indirect water heater, of brass and copper construction, is provided for furnishing a year 'round supply of hot water.

This boiler-burner unit is manufactured by The Heil Co., which company is located at 3000 W. Montana St., Milwaukee, Wis.



Portable air conditioner



Heat circulator

Improved Electric Auxiliary Heater

An auxiliary heater is shown at the top right which incorporates several improvements over earlier equipment in this line, according to the manufacturer.

This heater, which is finished in aluminum, is listed as weighing only 5 lb. 3 oz., is intended to circulate heat at an approximate velocity of 169 f.p.m., and to radiate heat evenly over a radius of 180 degrees. The overall height of the heater is listed at 17 in. It uses ordinary 110 volt current and is rated at 1250 watts. It is listed

as being applicable to homes, schools, hotels, hospitals and similar establishments.

The maker of this improved electric auxiliary heater is Wesix, Inc., 390 First St., San Francisco, Calif.

Small Portable Air Conditioner

The air conditioning unit shown at the lower left on the preceding page is said to have been designed for operation in an area up to approximately 4,000 cu. ft.

For this reason, it is understood, it finds its greatest application in offices, hotel rooms, apartments and the like. The working parts of this unit, as revealed by the manufacturer, consists of a small, rubber insulated electric motor, the shaft of which is extended front and rear. A 6 in. fan is provided on the front end of the shaft, while from the rear end a rubber belt reaches downward into a one gallon water reservoir at the bottom of the cabinet. The idea is that when the motor is running the belt will throw a fine spray of water, saturating a cotton filter which is placed at the top rear of the cabinet, while the fan draws air through the wet filter and spray and delivers it out through the grille at the front. The rotation speed of the motor is listed at 1200 r.p.m. It is stated that an electric heating element is placed just behind the grille for winter air conditioning, the motor speed being reduced automatically when the heating element is turned on. The cabinet is described as rust-proof steel, with a chromium plated grille and a carrying handle.

Announcement of this equipment has come from Health Air Systems, Inc., 2941 E. Jefferson St., Detroit, Mich.

New Electric Heat Circulator

A new electric heater, described as being based on a novel form of heating element, is shown on the preceding page at the lower right.

Safety and a maximum of evenly distributed warmth are listed as features of this heat circulator. According to the maker, the design of this equipment incorporates a heating element of large area, which creates a circulation of warm air throughout the room. In the manufacturer's description of this heater it is pointed out that the case is kept cool by ventilation from the rear. It is described as being 15 in. in height, 11½ in. in width and 4½ in. in depth. Operating current is listed as A.C. or D.C., 110 to 120 volts. The unit is furnished equipped with 8 ft. of cord and a plug. A top handle is provided with the idea of making the unit readily portable. It is said to be available in plain ivory or grained walnut. Homes, shops and small isolated buildings are included in a list of applications of the heater.

This heat circulator is a product of Tilton Electric Corporation, 15 East 26th St., New York City.

New Heater for Stokers

A heater is shown at the left on the next page which is said to have been designed primarily for installation with any make of stoker.

According to the manufacturer, ports are provided through which stoker connections may be made at either the right or left side. Pointed out as a feature of this

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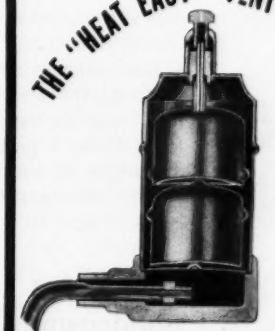
HOME COMFORT

HERE IT IS!

THE "HEAT EASY" VENT REGULATOR



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this age old theory . . . .
"SCIENCE ALWAYS WINS"

WITH the introduction of the "HEAT EASY" Vent Regulator, a brand new measure of heating comfort, never before considered possible, has been made available to every homeowner in your community. With this new feature of the "HEAT EASY" Dual Float Valve, it is now possible for each radiator, no matter how large or remote, to deliver heat EXACTLY as desired.

The "HEAT EASY" Regulator allows TWO WAY venting. When closed, permitting a minimum venting capacity, air is vented through orifice at top of regulator. In its gradual regulation the valve becomes opened to increase venting through this orifice and also through the side orifice in the valve cap.
Regulating the "HEAT EASY" Dual Float Valve in this manner permits the speed of venting capacities to be automatically adjusted to equal that of a cellar quick vent.

A VALVE THAT BREAKS ITS OWN VACUUM

The mechanical operation of the "HEAT EASY" Dual Float Valve is such that when the radiator cools, the upper float of Valve drops against atmospheric pressure to its original position; THUS breaking the vacuum in the system and immediately the entire system is ready to vent freely on the next cycle.

"HEAT EASY" Valves are sold only through recognized wholesalers.

A few Territories Open for Sales Representation.

HEAT EASY
DUAL FLOAT VALVES

SLATER MFG. & ENGINEERING CO.
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Put an end to
GASKET & PIPE THREAD TROUBLES
COPALITE
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Quickly . . . effectively . . . economically COPALIT and COPALITE put a permanent end to gasket and pipe thread troubles. This means much to the man who installs pipe lines, automatic heating equipment, air conditioning systems and jobs of a like nature. By applying COPALIT and COPALITE to all points where insulation or packing is necessary against high pressure, heat, cold, gases, steam, acids, and other fluids, he can now definitely GUARANTEE each job against the hazards to which these conditions ordinarily give rise.
TIGHT . . . Subjected to highest or lowest temperatures COPALIT and COPALITE are never affected in any way by contraction, expansion or vibration. They retain their original elasticity under all conditions. Parts on which these compounds are applied are readily disassembled. COPALIT and COPALITE seal all connections tight.
They set quickly on pipe thread joints and require no waiting. Tested to pressures up to 3000 pounds per square inch COPALIT and COPALITE have not been found wanting. They are both used on high pressure boiler flanges and manhole covers and on diesel engine cylinder heads without gaskets and also on horizontal joints of turbines.
Decide now to put an end to gasket and pipe thread troubles; use COPALIT or COPALITE.
COPALIT is available in quart cans and COPALTITE is made up in convenient collapsible tubes, packed 36 to carton.
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THE Wayne Mistoil Burner is right. Every installation you make pleases . . . and leads to another sale. The Wayne Dealer Franchise is right, too. You make more money with less invested. Only one size burner to carry in stock. The name Wayne lessens sales resistance, for it has a reputation gained by a quarter century of satisfactory performance.
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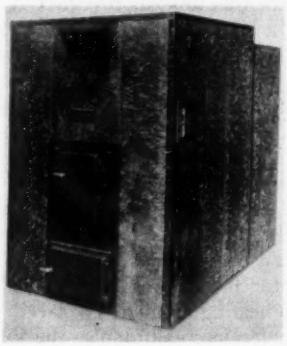
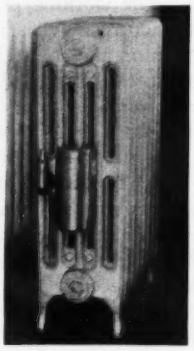
FORT WAYNE, IND.
Eastern Office and Warehouse: 63 Flatbush Avenue Ext., Brooklyn, N. Y.

equipment is a clinker disposal chute which is intended to allow hot clinkers to drop to a receptacle within the heater, where they may cool before being removed and disposed of. Side stoker connection giving free access to the heater front is denoted as another feature. The manufacturer explains that this equipment is constructed in connection with a blower and an air filtering system, and is shipped complete with a square casing, a blower, dust filters, an automatic humidifier and a fan control.

This heater is being produced by Premier Furnace Company, located in Dowagiac, Mich.



New heater for stokers



Automatic humidifier

Automatic Humidifier

The item shown at the right is designed to send moisture into the air in proportion to the steam pressure in the radiator.

This humidifier is designed to operate automatically, using water supplied by the condensation of steam from the radiator. A float valve described as being self-closing, like an automobile tire valve, is provided to maintain the water at a fixed level. It is understood that to install this equipment, the vent valve is removed from the radiator and the humidifier is attached in its place. The air valve should then be connected on the side of the humidifier. The manufacturer points out that this unit is designed to humidify a room of ordinary size, and that if more than one radiator is required to heat a room, a humidifier should be installed on each radiator for thorough humidification. It is stated that when attached to a steam or vapor radiator, this equipment will supply from ½ to 1 pint of water vapor per hour of heating, depending on the steam pressure in the radiator.

The manufacturer is Maid-O'-Mist, Inc., 43 E. Ohio St., Chicago, Ill.

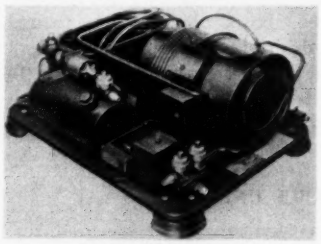
New Sealed Condensing Unit

The equipment shown at the upper left on the next page is described as a new addition to an already existing line of sealed commercial condensing units.

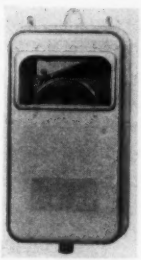
The sealed construction feature is said to allow the water cooling of the compressor, condenser and motor, thus making it possible to install the unit in closets, under counters, or in similar out of the way locations. This unit is listed as being 24 in. long, 18½ in. wide and

11⅜ in. wide. It is indicated that the motor is ⅓ h.p., capacitor type, directly connected to the two cylinder compressor, the bore and stroke of which are rated at 1 in. and ⅞ in., respectively.

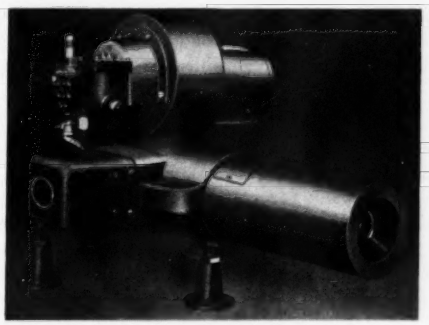
Westinghouse Electric & Manufacturing Company of East Pittsburgh, Pa., makes this new condensing unit.



Sealed condensing unit



Time switch



Gun type oil burner

Gun Type Oil Burner

The accompanying illustration shows an oil burner which recently has been announced.

The general specifications include a motor of the split phase type, designed to develop ⅛ h.p. at 1725 r.p.m., 110 volt, 60 cycle, A. C. only. The transformer is rated at 10,000 volts and is described as having the mid-point grounded to eliminate radio interference. It is sealed in pitch and is described as being oil and water proof. The capacities listed for this burner are 1,400 sq. ft. of maximum equivalent direct hot water radiation or 900 sq. ft of steam radiation (also maximum e.d.r.). The fuel recommended for this burner is No. 3 commercial standards designation or better. Ignition is from an electric spark only and a choice of either a continuous or intermittent type is provided.

Fluid Heat Division, Anchor Post Fence Company, Eastern Ave. and Kane St., Baltimore, Md., is the manufacturer of this burner.

New Time Switch

A device designed for the automatic electric switching of electric circuits is shown in the group above at the upper right.

It is stated that this switch is applicable for store and show window lighting, floodlighting, the control of water

Like a SUMMER SHOWER

$19.50 LIST

Health Air Junior—the new portable Air Conditioner—cleanses, humidifies, circulates the air. Keeps the atmosphere fresh and pure. Ideal for office or home. May be attached to any light socket.

Cabinet is beautifully finished of rust-proof steel with chromium grille and carrying handle.

Write today or wire for full details, discounts, etc., or take advantage of our Introductory Offer. We will ship one sample Health Air Junior at quantity discount to concerns of established rating.

Ask about the complete Health Air line of Automatic Heating and Air Conditioning Units.

HEALTH AIR SYSTEMS INC.
DETROIT 2941 East Jefferson Avenue MICHIGAN

ON HARD OR SOFT WATER

KLEEN TUBE

WATER HEATERS

SAVE MONEY FOR EVERYONE

No replacements are ever necessary because all tubes are *straight* and open at both ends—easily cleanable. Deposits of lime are inhibited because the high, burnished finish of the tubes is not destroyed by bending or forming. Kleen-Tube may be maintained at original efficiency for the life of any heating plant.

ASK FOR COMPLETE DATA

ADAMS ENGINEERING CO., Inc.
2607 Wentworth Ave. Chicago

heaters, furnaces and other similar uses. It has been designed, says the manufacturer, for A.C. circuits, 115 and 230 volts, with a current rating of 40 amperes per contact. It is understood that the operation of the switch is by small riders clamped to the periphery of the time dial at selected points by means of thumb screws. The purpose of these riders is to engage the tripping lever of the switch. The switch itself consists of a ratchet operated cam, actuated by a spring, the purpose of which is alternately to force the contact buttons apart and allow them to close. It is stated that this switch may be set to omit switching operations on one or more days of the week if desired. The switch illustrated is described as being of the single-throw, single-pole type, although it is understood that the single-throw switch is also available in double-pole and triple-pole forms.

It is a product of General Electric Company, located in Schenectady, N. Y.

Units—

(Continued from Page 83)

to the cooling surface and the heating system is connected up to the heating element so that either service is on tap at all times when the heating or cooling mediums are available.

One of the simplest units manufactured is that given in Fig. 10, a front elevation being shown in Fig. 11. This unit is modeled after the well known unit heater idea and consists of a fan, motor, combined heating and cooling surface, and adjustable deflectors on the discharge face. During the winter this unit may be used the same as a unit heater when properly connected up with a steam supply. In summer it is used as a dehumidifier and cooler if supplied with cold water from a well of sufficiently low temperature, or from a refrigeration plant.

Still another entirely different type of unit frequently used in industrial work is shown in Fig. 12 in which the fans are in the top with the element below, but the discharge is through 90 degree elbows which may be turned to blow in any direction desired. This unit is built of galvanized iron and will heat the air, when supplied with steam, or cool and dehumidify the air, when supplied with water of a sufficiently low temperature. No humidifying or filtering is attempted.

PORTABLE UNITS

A portable unit also has been developed which is rolled around on castors and has an electric plug and hose for connecting to sink. This is with the idea of use in hospitals or in homes where it might be desirable to condition one room during the day and an entirely different room at night. The unit itself is 43 in. long, 33 in. wide and 13 in. deep weighing in the neighborhood of 500 lb.

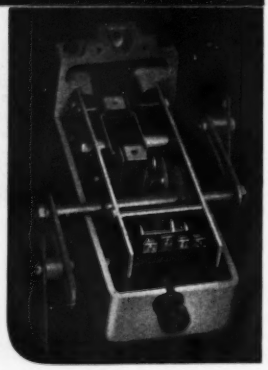
COOLING WITH ICE IN UNITS

A second type of portable unit and one which has been on the market for some time is the ice cooled unit, a typical example of which is shown in Fig. 13 and consists of an interior case of galvanized iron in which a cake of ice is placed and the space between the ice

BARBER-COLMAN

. . . THE ONLY FURNACE REGULATOR . . . WITH "compensated control"

Actuated By Temperature . . Not Time



EXPERIENCE has convincingly demonstrated every claim ever made for the "COMPENSATED CONTROL." Room temperature throughout the entire heating season is absolutely uniform. Overrun during warming-up periods is entirely eliminated. Additional fuel savings are effected. The cost is low—the returns high. Unbiased users certify these facts. *Write for full information.*

COMPENSATED CONTROL

Actuated by TEMPERATURE NOT *by* TIME

Dealers! . . Investigate the BARBER-COLMAN SYSTEM

The "COMPENSATED CONTROL" is goin' to town! You can show better control and greater savings by applying it to any automatic control job. Get the facts! Don't pass up "COMPENSATED CONTROL."

Applicable to any hand-fired warm air hot water, steam, or vapor furnace.

Barber-Colman Company, Rockford, Ill.

• BOILERS • TANKS •
• STORAGE HEATERS •

IN COPPER SILICON ALLOY AND ALL COPPER

Large Boilers, Tanks and Storage Heaters for Hotels, Hospitals, Schools, Institutions, Office and Apartment Buildings and all Industrial Purposes.

Jobbers and Plumbing Contractors working on Government orders, Federal Specifications WW-P-541, will find Gerstein & Cooper equipped to meet the most exacting requirements and make deliveries "On Time."

G & C RANGE BOILERS
GUARANTEED 20 YEARS
IN COPPER SILICON ALLOY AND ALL COPPER
A PROFITABLE LINE TO HANDLE

GERSTEIN & COOPER CO.
South Boston, Massachusetts
Offices in New York and Baltimore

Representatives: Troop Water Heater Co., Pittsburgh; Edward Sinn, Harrison, N. J.; Strong, Carlisle & Hammond Co., Cleveland, Ohio; Lydon, Cousart & Co., Charlotte, N. C.

and the case filled up with water. The water makes a good conductor between the ice and the case, and the outside surface of the case serves as the cooling surface for the air which is drawn in through the side and discharged through the top.

UNIT CONTROLS

Unit controls are so varied to suit the different limitations and characteristics of each type of unit as to make it impossible to take each up in detail. Fig. 14 however shows the method used to control the unit and the refrigeration machine and the wiring in connection with the two motors as set up by one manufacturer. It will be noted that a magnetic starter is used to turn on both the refrigeration machine and the unit fans, but that an undue increase in pressure in the refrigeration line will cause the pressure switch to close off both motors. The operation of the hand valve on the unit itself relieves the pressure on the refrigeration line and automatically starts the apparatus which continues to run until the hand valve is closed down sufficiently to stop both motors by raising the pressure on the refrigeration discharge line.

COMBINED REFRIGERATION AND CONDITIONING

A unit, which has radical differences from all of those which have been described, is that shown in Fig. 15 where the refrigeration machine is contained within the unit itself and all that is necessary is to connect the water supply, waste and electric wires to the unit and let it run. As will be noted in the illustration the refrigeration portion occupies the left hand side of the unit and the ordinary air conditining equipment the right hand side. In spite of this the unit is only 49 in. long, 32 in. high and 18 in. deep.

Exceeding quietness in operation is obtained by using slow speed equipment, acoustical lining in the refrigeration compartment and between the refrigeration and air conditioning compartments, and on the inside of the casing. The compressor operates at about 290 r.p.m., and the fan at about 700 r.p.m. The compressor is air cooled and the heat is partially removed from the air by passing this air over a condenser water coil before the water goes to the condenser. The refrigeration capacity is about 0.70 tons and is sufficient to keep the ordinary room comfortable if no unusual conditions of heat production are encountered.

New Information and Aids to Sales

Pamphlet Presents Smoke Problem

"The Municipal Smoke Problem" is the title of a 20-page booklet which is available from Mellon Institute of Industrial Research, University of Pittsburgh, Pittsburgh, Pa. This book was written by H. B. Meller and L. B. Sisson, both of the Mellon Institute, and is described as a brief treatise on the products of combustion of fuels and their effects. The booklet contains information which is calculated to be useful in the choosing of new equipment and in the selection of fuel and the best

Proved Performance on Water Heater Tanks

Accuracy and Dependability —these are the vital themes in the production of "Patrols." Thirty years' experience is embodied in their design and construction.

For Installation On Domestic Water Heaters and Range Boilers as Dependable Protective Water Relief Devices, Six Types of "Patrol" Temperature and Pressure Relief Valves Offer Real Extra-Profit Opportunities.

Write for Catalog and Technical Information—Form 1235.

"Patrol" Type "DTP" Temperature and Pressure Relief Valve. Listed by Underwriters' Laboratories and American Gas Association. Complete Details On Request.

THE PATROL VALVE CO.
11262 LOCUST AVENUE
CLEVELAND, OHIO
"PATROL"

ADJUSTS TO ANY ROOF PITCH

● Eagle Super Roof Flanges are one-piece and *all lead.* They're pliable — easy to adjust to fit any roof pitch. Write for complete information.

THE EAGLE-PICHER LEAD COMPANY
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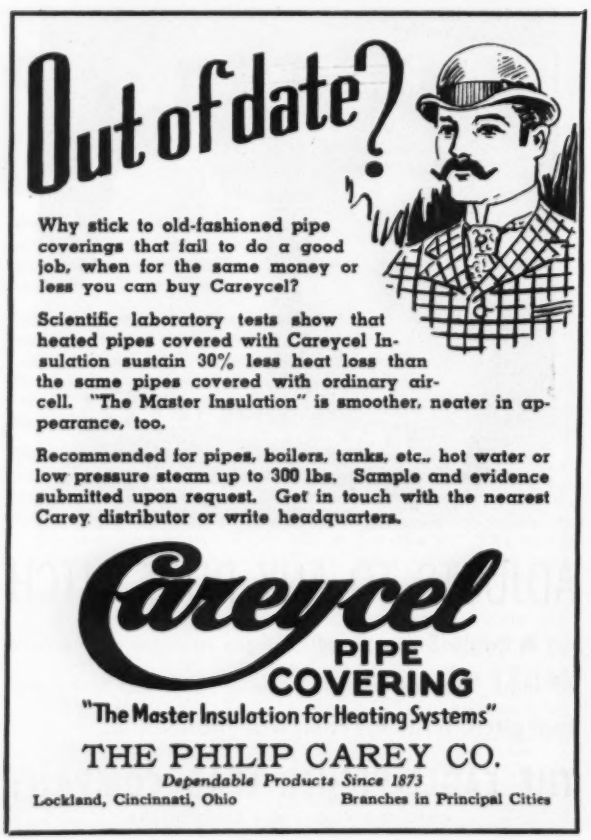
Screwed Pipe Fittings
BRONZE and MALLEABLE IRON
Kennedy Screwed Pipe Fittings are made of dense, smooth, homogeneous metal, accurately machined to 0.010-in. limits, and their generous chamfer and sharp clean threads make up tight joints quickly. Malleable iron fittings are annealed for 200 hours to assure thorough malleability, and bronze fittings are made of the same true bronze metal used for Kennedy Bronze Valves. Try Kennedy fittings on your next piping job and you will see why so many engineers and contractors standardize on them exclusively.
Kennedy Products also include bronze and iron body gate, globe, angle and check valves in all standard sizes and pressures, cast iron flanged fittings and companion flanges.
Send for catalogue describing and listing the entire Kennedy line.
The Kennedy Valve Mfg. Co.
Elmira, N. Y.
Warehouses in Principal Industrial Centers
KENNEDY
VALVES-PIPE FITTINGS-FIRE HYDRANTS
BUY KENNEDY PRODUCTS FROM YOUR LOCAL DEALER


Out of date?
Why stick to old-fashioned pipe coverings that fail to do a good job, when for the same money or less you can buy Careycel?
Scientific laboratory tests show that heated pipes covered with Careycel Insulation sustain 30% less heat loss than the same pipes covered with ordinary air-cell. "The Master Insulation" is smoother, neater in appearance, too.
Recommended for pipes, boilers, tanks, etc., hot water or low pressure steam up to 300 lbs. Sample and evidence submitted upon request. Get in touch with the nearest Carey distributor or write headquarters.
Careycel
PIPE COVERING
"The Master Insulation for Heating Systems"
THE PHILIP CAREY CO.
Dependable Products Since 1873
Lockland, Cincinnati, Ohio
Branches in Principal Cities

method of burning it to secure efficiency and practical smokelessness. Combustion, effects of air pollutants, and how to get cleaner air are some of the points covered.

Patterson Oil Heater Booklet

A folder has been issued by The Patterson-Kelley Co., of East Stroudsburg, Pa., which describes equipment made by this company for heating fuel oil. Several types of heaters are discussed, with information regarding construction, capacities, sizes and applications being given. The first page of this pamphlet bears the words "Catalog Section No. 801."

Burnham Issues Pamphlets

Burnham Boiler Corporation, of Irvington, N. Y., is making available eight pamphlets, which are being issued at the rate of one each month. The purpose of these folders is to present to the contractor and dealer descriptions of various types of heating systems, with a typical layout of the system described. It is understood that a different system will be covered each month.

Ball Bearing Folder Issued

A folder on ball bearings and housings for fans and blowers has been developed by SKF Industries, Inc., located in Philadelphia, Pa. Details and dimensions of ball bearing fan boxes are presented, along with catalog data on ball bearing knee type blower boxes. A list of information necessary for equipping fans with ball bearings also is featured.

Stuffer Features Uniform Warmth

A stuffer recently issued by Air Controls, Inc., of Cleveland, Ohio, tells of the advantages of uniform heating with filtered air in homes. Equipment manufactured by this company for the purpose of supplying such air is described and illustrated.

Folder Announces Window for Boilers

A window which may be built into the fire door of a boiler for observation of the flame of the burner is described and illustrated in a circular now available from National Radiator Corporation, Johnstown, Pa. The construction and method of installing the window are shown in some detail in this bulletin.

Information on Circulators

Data Sheet D-5 and Data Sheet D-15-1, from Rochester Circulator Corporation, of Rochester, N. Y., contain a considerable amount of information on low pressure circulating units made by this company. The former sheet is devoted almost exclusively to material descriptive of these circulators, while the latter sheet illustrates the application of a circulating unit to a heating system.

"Fire Tamers" Is Title of Booklet

Johns-Manville, 22 East 40th St., New York City, lately has published a pamphlet under the title of "Fire

Tamers." This is referred to as the story of laboratory research to minimize the damage of flame to furnace walls. The booklet also tells how this company has developed refractory cements for industrial uses. Numerous illustrations are included which show these materials in the making and as finished products.

Pamphlet on Circulating Heaters

A circular has been made available by Associated Oil Burner Co., Inc., of 30 Batholomew Ave., Hartford, Conn., which tells of their new line of circulating heaters. The folder is illustrated and the descriptive matter gives sizes, construction details and similar information in regard to this equipment.

Savotherm Folder on Heating Equipment

Savotherm Corporation, 1246 Broad St., Newark, N. J., has brought out a folder giving the details of its auxiliary heating equipment for automatically fired boilers. Besides illustrations and descriptions of the construction and applications of this equipment, the folder contains complete catalog data, including sizes, prices and the like.

Simplified Guide Chart

Lamneck Products, Inc., 416 Dublin Ave., Columbus, Ohio, has just brought out what is referred to as a simplified guide chart for the jobber's purchasing agent, furnace manufacturer and dealer and specification man. Its purpose is to show at a glance standard stock sizes and prices, with a view to simplifying the estimating on a heating or air conditioning installaton.

A Hand Book for Home Owners

Housing Publications, Inc., 25 West 43rd St., New York City, recently has published a large paper bound book under the title of "C. B. Smith's Home Owners' Hand Book." This is described as a complete compilation of building information and contains material which is designed to help in solving repair and building problems.

Additions to Bulletins

The Ohio Electric Mfg. Co., 5900 Maurice Ave., Cleveland, Ohio, has just issued new sheets No. 4, No. 5, No. 6 and No. 7 of Bulletin No. 212-B, showing dimensions of the various types of fractional size motors offered in standard frames. Also, this company has recently brought out sheets No. 10, No. 11, No. 12, No. 13 and No. 14 of Bulletin No. 211-A, giving dimensions of popular special designs and identifying them with standard frames.

Three Booklets from Westinghouse

"Home Air Conditioning," "All Electric Kitchen," and "Ice By Wire," are the titles of three new booklets which have been made available by Westinghouse Electric & Manufacturing Company, 200 E. Fifth St., Mansfield, Ohio. The first of these is a pamphlet in black and white and silver, with a cellophane cover. It tells of the

Every new or old heating job, Large or Small, should have an

EXCELSO

QUALITY WATER HEATER

There is a type and size for every building.

Capacities range from 30 to 2500 gallons.

EXCELSO PRODUCTS CORP.
57 Clyde Avenue Buffalo, N. Y.
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Ask Your Jobber

Are YOU the Man?

Past records and analysis of present conditions definitely point to high sales of oil burners and oil furnaces this Winter. The old theory that oil burner sales stop with cold weather is no longer true. Our own dealers will make more money this Winter than any Winter in the past. Dealers who join us NOW, will not only make EXTRA profits this Winter, but will also be prepared for the early Spring business. Master Kraft offers a COMPLETE line of oil burners and oil furnaces to meet every heating requirement. Wide price range meets competition. Thousands installed. Complete factory sales and advertising co-operation. Are YOU the Man? Write for full information.

HARVEY - WHIPPLE, INC.
1257 Emery St., Springfield, Mass.

Master Kraft TRIPALATED OIL BURNERS

How You Can Prove Good Heating Performance

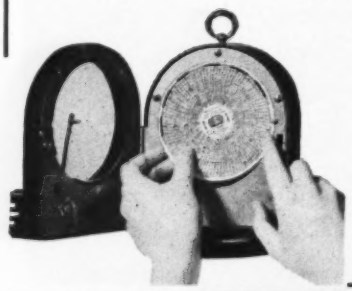
Use Practical Thermometers

The average prospect has difficulty visualizing just what good heating performance is. To help him understand, use a Practical Recording Thermometer 24-hour temperature chart. Then it is easier to make the sale.

A Temperature chart gives a clear picture of heating performance. With a Practical Thermometer such charts are easy to get. You simply run the Thermometer 24 hours in a home having your equipment.

Start using this sales making Thermometer. Priced at $18. You can test it yourself under our 15 Day Trial Plan. Write today for complete information or ask your jobber.

Practical Instrument Company
2711 N. Ashland, Chicago



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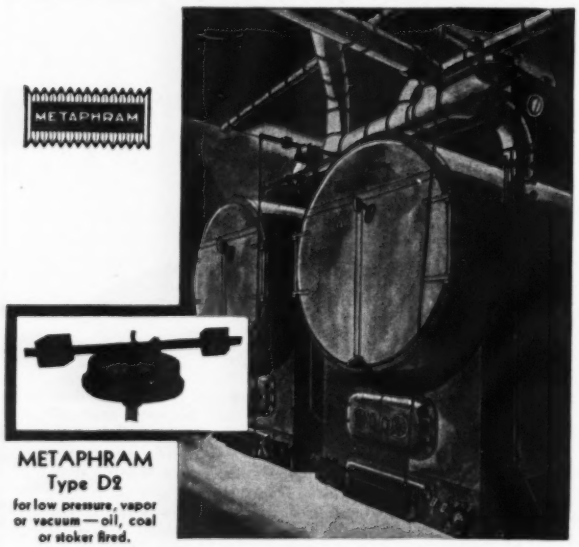
24-Hour chart
36-Hour clock
Bakelite case
Open type pen
Pen built in door
Easy to set
Non-breakable face
No chained parts
Light weight
Carrying case



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Type D2
for low pressure, vapor or vacuum — oil, coal or stoker fired.

METAPHRAM Gradual Control

covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil or coal fired.
Full stock carried in New York, 210 E. 45th St.

Descriptive Bulletins on Request

NATIONAL REGULATOR CO.
2317 KNOX AVENUE CHICAGO

advantages of air conditioning in the home and describes this company's domestic air conditioning equipment. The second of these booklets is in four colors and features the part which the National Housing Act plays in producing a modern kitchen. The kitchen furniture manufactured by this company is shown in contrast with antiquated equipment. The third booklet sets forth the reasons for electric refrigeration and describes this company's equipment for this purpose.

Cooling Equipment Circular Issued

Servel, Inc., Evansville, Ind., recently has made available a descriptive folder on their electric refrigerating equipment. The greater part of this booklet is taken up with descriptions of the applications for which this equipment is suited. The bulletin states that this type of equipment is available for every commercial need. The various units and their applications are illustrated and described in this 16-page circular.

Refrigeration Bulletin

Fedders Manufacturing Co., Inc., of Buffalo, New York, lately has issued Bulletin 75-B, which is described as covering a complete line of evaporators, ice cube makers, unit coolers and valves for household and commercial electric refrigeration. It is stated that this catalog might serve as an encyclopedia of refrigeration equipment applicable to restaurants, hotels, institutions, taverns, stores and similar establishments.

Describes Air Valves in Bulletin

New York Air Valve Corp., 611 Broadway, New York City, has issued a bulletin which illustrates the workings of its controlled orifice radiator valves. These valves are described and illustrated with both exterior and cut-away views. The bulletin also serves as a price list, giving the number, list price and dealer's price of each valve.

Folder on Winter Air Conditioning

The Heating and Air Conditioning Division of The Edwards Manufacturing Co., Fifth and Butler Streets, Cincinnati, Ohio, recently issued a pamphlet covering its winter air conditioning equipment. Drawings and photographs illustrate this equipment, while its features and construction details are listed and explained. The first page of the folder is given over to the setting forth of the reasons for and the advantages of winter air conditioning. Dimensions and capacities of this line of equipment also are tabled in circular.

Steam Plants Are Discussed in New Book

McGraw-Hill Book Co., Inc., 330 West 42nd St., New York City, just recently has published a book by E. B. Woodruff and H. B. Lammers, both of The Union Gas and Electric Co., and both instructors at the Ohio Mechanics Institute. The book is entitled "Steam Plant Operation," and has been written for the purpose of presenting the approved methods of operating all of the equipment usually found in a power plant, giving a combination of practical and technical information. The authors have given considerable attention to the construction,

operation and maintenance of steam boilers and boiler accessories, while the properties of various fuels and the operating characteristics of steam engines and other power plant equipment also are treated in some detail. A rather comprehensive chapter on valve-operating mechanisms and governors contains interesting information, with chapters also set aside for discussions of pumps and steam turbines. The book is something over 350 pages in length and is laid out in text-book style, with practical questions and problems at the end of each chapter. Five appendixes are included at the back of the book containing useful data such as units of measurement, practical arithmetic, a glossary of heating engineering terms, saturated steam tables and the calculation of the stayed area of the heads of horizontal return-tubular boilers. The book is cloth-bound in green and is illustrated with drawings and photographs.

Anderson Issues Envelope Stuffers

Anderson Manufacturing Co., located in Cambridge, Mass., has brought out a pair of envelope stuffers which feature a series of radiator valves included in this company's line. One of the folders is concerned mainly with the technical features, while the other presents the sales points of these valves.

Air Conditioner Described in Folder

Super Oil Heater Sales Co., 613 Connecticut Blvd., East Hartford, Conn., has just issued a bulletin on their air conditioning unit. This unit is illustrated and its various mechanisms are described and their functons explained. Specifications for the unit are listed in detail on the last page of the folder.

National Unit Heater Booklet

National Radiator Corporation, located at Johnstown, Pa., recently has made available an eight page folder which contains information concerning its unit heaters. The greater part of the folder is taken up with descriptive tables, such as tables of basic ratings, B.t.u. constants, supply pipe sizes, return pipe sizes and temperatures and latent heat of steam at various pressures. The unit heaters referred to are illustrated, their features listed and their applications described. The pamphlet also contains some problems, described as being typical of unit heater installations, and their solutions.

Barber Gas Pressure Regulators *Eliminate* Gas Bill Complaints

Increasing numbers of Gas Appliance Manufacturers, Gas Companies, Jobbers and Dealers have switched to Barber Regulators because of their exceedingly low pressure drop, compactness, bronze bodies, and precision of operation. Why not write today for complete literature, prices and discounts on the entire Barber line of Burners and Regulators?

The Barber Gas Burner Co.
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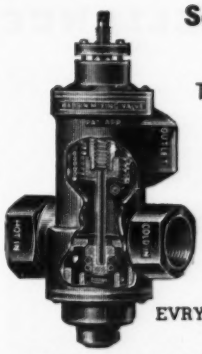
CLEVELAND . . . . . OHIO

Made in ¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2" sizes.

Solves Hot Water Problems!

BABBIN
THERMOSTATIC MIXING VALVE
Automatically Regulates Hot Water Temperature



Delivers hot water at controlled temperature from submerged water systems. Exclusive outstanding patented features make its use a real economy and its efficiency unequalled.

Guaranteed for two years against any defects of material or workmanship.

Ready in 1—1½ and 2 inch sizes.
DISCOUNTS AND CIRCULAR UPON REQUEST.

EVRY-USE PRODUCTS COMPANY, INC.
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Pumps—Blowers—Cellar Drainers—Mixers—Exhaust Fans—Spray Booth Fans—Condensation Units—Water Circulators

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Adjustable, Receding, Solid
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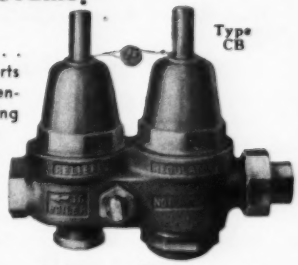

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Home Shows—

(Continued from Page 71)

shows both as regards development and participation.

The program calls for the direction of these shows by experienced, professional managers, who will be allowed to make a reasonable minimum profit, all profits above a certain point to revert to the local better housing committee. Each show will be financed locally. All plans for shows must be submitted to the exhibition unit of the Federal Housing Administration for approval and must conform to regulations for home shows which have been set up by the Manufacturers' Housing Display Council in cooperation with the FHA.

The regulations provide definitely as to content of shows, necessary sponsorship, participants, rentals, management, admission charges, duration of shows, etc.

Plans for the national home show program were discussed in detail at the meeting of the Manufacturers' Housing Display Council held Oct. 30 in the office of Peter Grimm, assistant to the secretary of the treasury, Washington, D. C. The program as it now stands represents the work of this council acting in cooperation with the Federal Housing Administration.

REPRESENTATIVE MANUFACTURERS FORM COUNCIL

The Manufacturers' Housing Display Council is composed of representatives of manufacturing concerns and has as its purpose the working out of a better method of displaying building material and equipment. This council has discussed the various types of exhibits, including the motor exhibit, called the caravan; moving exhibits on trains; and the use of idle ships along the various port cities. It has decided that the home show idea should be given first attention, and that a plan for shows is necessary to prevent inexperienced or unscrupulous promoters from foisting on the industry undesirable shows.

During the course of the meeting on Oct. 30, Russell G. Creviston, Crane Co., chairman of the Manufacturers' Housing Display Council, reviewed for the members all the work which had been done to date and introduced Henry A. Guthrie, chief of the exhibition unit of the Federal Housing Administration, who gave an explanation of the educational housing exhibit plans that will be available to approved home shows. Mr. Guthrie displayed models of exhibits which he has developed.

At the conclusion of the Oct. 30 meeting it was decided that locations of the first shows and subsequent shows be left to the discretion of the executive committee of the council and the Exhibition Unit of the FHA.

The executive committee of the Manufacturers' Housing Display Council is composed of the following: H. M. Shackelford, chairman, Johns-Manville, New York; Marshall Adams, American Radiator and Standard Sanitary Corp., New York; A. K. Barnes, Armstrong Cork Co., Lancaster, Pa.; Bertram B. Caddle, Copper and Brass Research Assn., New York; L. F. Collister, Sherwin-Williams Co., Cleveland, O.; Russell G. Creviston, Crane Co., Chicago, Ill.; George S. Eaton, Brick and Tile Sales Corp., Pittsburgh, Pa.; H. H. Hobart, Curtis Companies, Inc., Clinton, Ia.; E. J. Mehren, Portland Cement Assn., Chicago, Ill.; and J. F. Quinlan, General Electric Co., New York.

Patents

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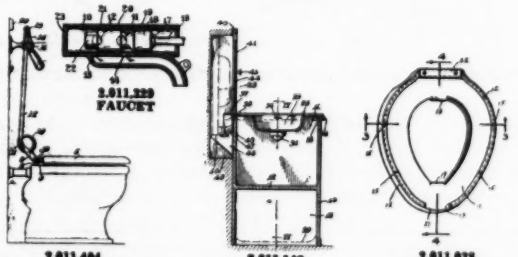
Plumbing

2,011,329. Faucet. Henry Wayer, Columbus, Ohio.

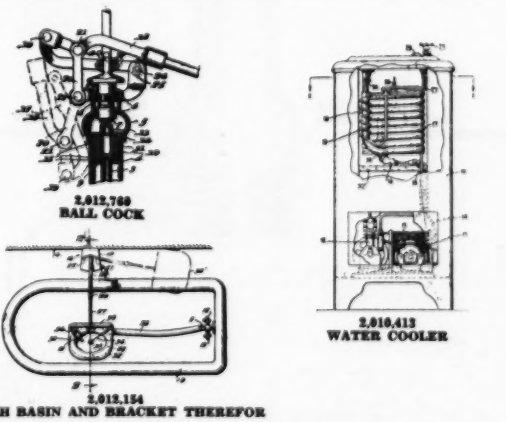
2,011,404. Seat or Cover Lifter. Louis Gilasso, New York, N. Y.



2,011,148. Bathtub. William Hoehn, River Forest, Ill.

2,011,038. Toilet Seat. Herman F. Craig, Franklin, Ind.

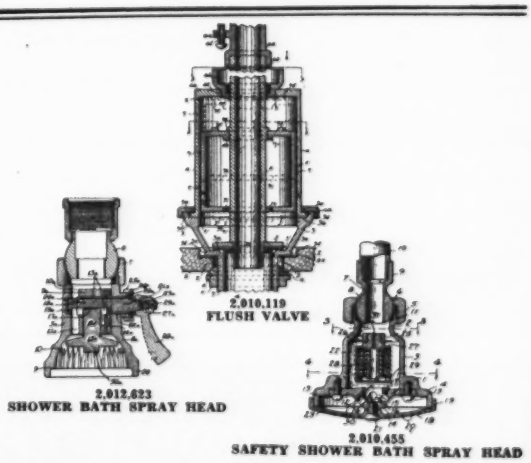
2,012,760. Ball Cock. Michael D. Helfrich, Evansville, Ind.



2,012,154. Wash Basin and Bracket Therefor. Frank C. Bates, Trenton, N. J.

2,010,413. Water Cooler. Frank D. Peltier and Walter A. Kuenzli, Evansville, Ind., assignors to Servel, Inc., New York, N. Y., a corporation of Delaware.

2,012,623. Shower Bath Spray Head. Robert C. Boyd, Louisville, Ky., assignor to Standard Sanitary Manufacturing Company, a corporation of New Jersey.



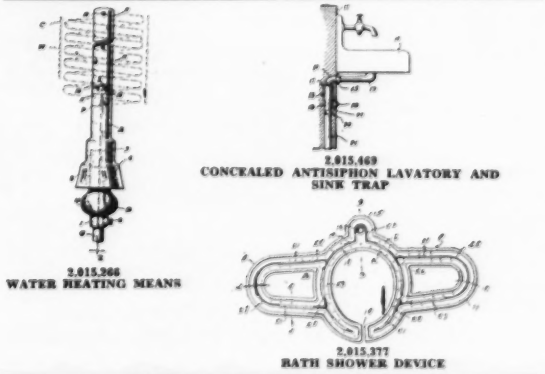
2,010,119. Flush Valve. Bert O. Tilden, Trenton, N. J.

2,010,455. Safety Shower Bath Spray Head. Isadore Herzbrun and Charles F. Schultis, Cleveland, Ohio.

2,015,266. Water Heating Means. Rudolph M. Gerer, Milwaukee, Wis.

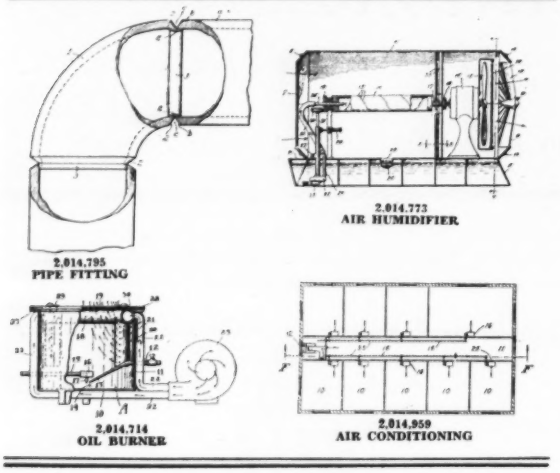
2,015,469. Concealed Antisiphon Lavatory and Sink Trap. James F. Church, Winthrop, Maine.

2,015,377. Bath Shower Device. Austin Callander, Los Angeles, Calif.



Heating

2,014,795. Pipe Fitting. Charles R. Birdsey, Pasadena, Calif., and Edward Hall Taylor, Oak Park, Ill., assignors to Taylor Forge & Pipe Works, Cicero, Ill., a corporation of Illinois.



2,014,773. Air Humidifier. Ralph D. Matteson, Boise, Idaho.

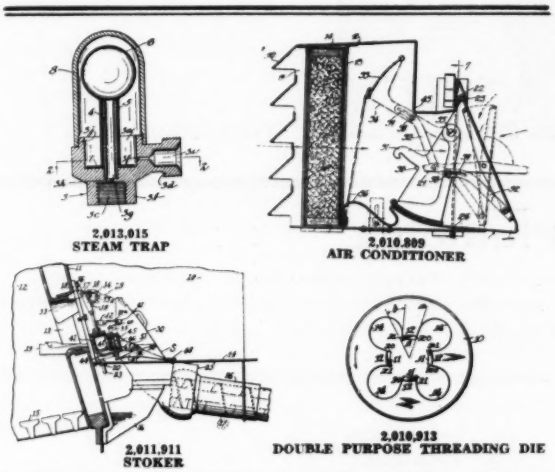
2,014,714. Oil Burner, Emory Louis Bauer, Wilmington, Del.

2,014,959. Air Conditioning. Reuben H. Anderegg, La Crosse, Wis.

2,013,015. Steam Trap. Felix J. Vincent, Minneapolis, Minn.

2,010,809. Air Conditioner. Daniel L. Braine, Brooklyn, N. Y.

2,011,911. Stoker. Frank P. Roesch, Chicago, Ill., assignor to the Standard Stoker Company, Incorporated, a corporation of Delaware.



2,010,913. Double Purpose Threading Die. Chester F. Bruce and Rollin S. Bascom, Greenfield, Mass., assignors to Greenfield Tap & Die Corporation, Greenfield, Mass., a corporation of Massachusetts.

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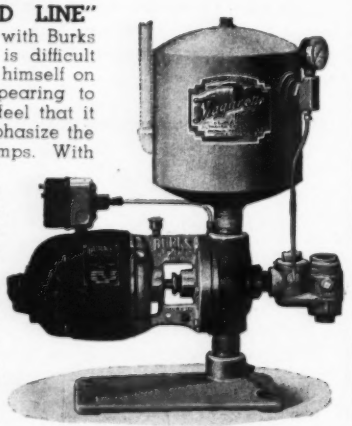

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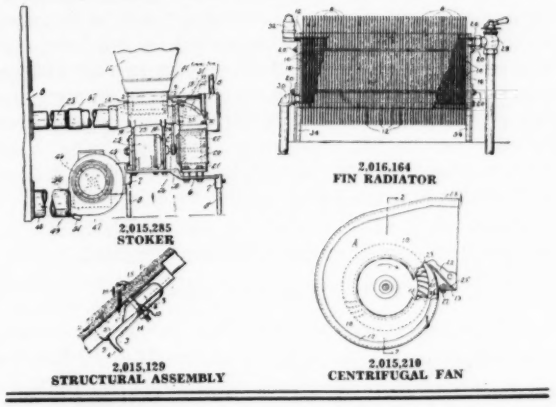
Grand Central Terminal Bldg., New York, N. Y.

2,015,285. Stoker. Roland P. Place, Midland, Mich., assignor to Roland P. Place Company, Midland, Mich., a corporation of Michigan.



2,016,164. Fin Radiator. Harry D. Williams, Seattle, Wash.

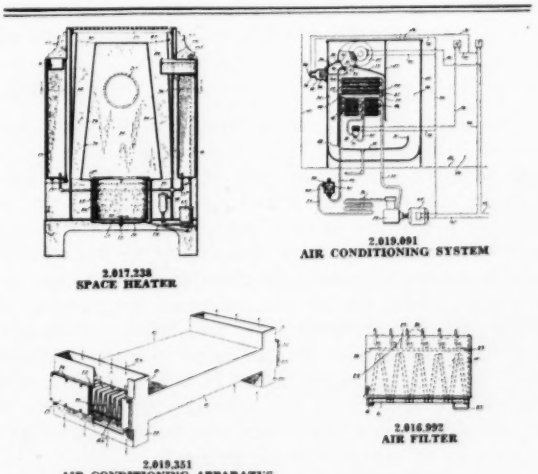
2,015,129. Structural Assembly. Paul A. Voigt, Ozone Park, and Aaron E. Shultis, Yonkers, T. Y., assignors to Johns-Manville Corporation, New York, N. Y., a corporation of New York.

2,015,210. Centrifugal Fan. Ernst Witzel, Racine, Wis., assignor to Young Radiator Company, Racine, Wis.

2,017,238. Space Heater. Harold L. Finley, La Porte, Ind., assignor to The Lonergan Manufacturing Company, Inc., La Porte, Ind., a corporation of Indiana.

2,019,091. Air Conditioning System. Lawrence A. Philipp, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a corporation of Michigan.

2,019,351. Air Conditioning Apparatus. Harold F. Lathrop, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York.



2,016,992. Air Filter. Lewis L. Dollinger, Rochester, N. Y., assignor to Staynew Filter Corporation, Rochester, N. Y.

Printed copies of patents complete can be obtained from the Patent Office at 10 cents each. Address: The Commissioner of Patents, Washington, D. C.

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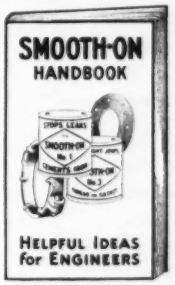

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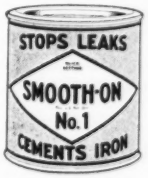

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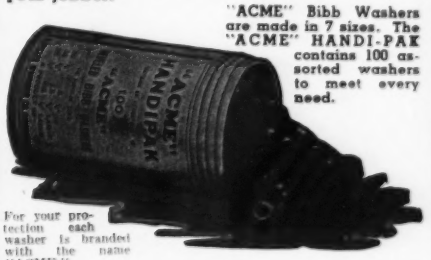

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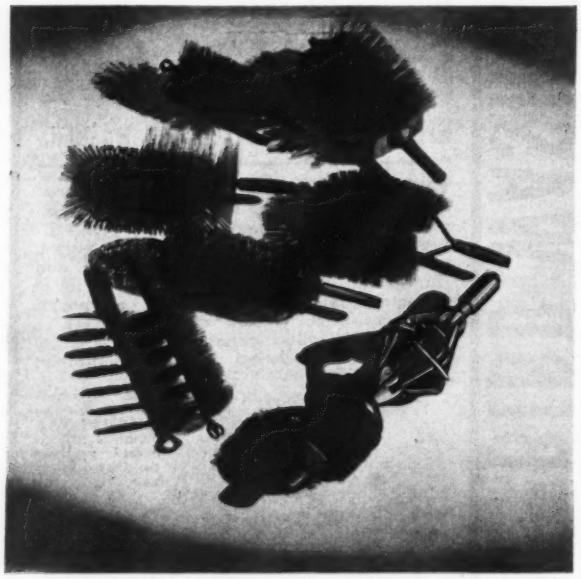

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Problem—

(Continued from Page 67)

reader has to deal only because he is supplying no outside air to the room in order to keep a positive pressure on the room and, so, inward air leakage is to be expected. As the room is exposed and has windows on three sides it is probable that there will be at least two air changes take place and possibly somewhat more. Assuming that two air changes is reasonably correct, our correspondent has forgotten in his set-up to multiply by 15 deg. Fahr. that the infiltering air must be lowered to bring it down to room temperature which makes the calculation

$44 \times 90 \times 12 \times 2 \times 15 \times 0.02$ or 28,512 Btu.

for this item instead of the 1,900 Btu. expected.

WHAT IS THE SUN EFFECT?

For the third item of sun effect our reader frankly asks for advice and we suggest adding about 10 Btu. per sq. ft. on the roof and about 50 Btu. per sq. ft. to the glass on the west wall* where the greatest amount of glass is located when compared to the east wall. If the system is made sufficient to remove the sun effect heat from the west wall it will be adequate to take care of it on the east wall where the glass surface is less because the sun cannot shine on both walls *at the same time*. This will add for sun effect

Roof, 3,960 × 10 Btu. or	39,600 Btu.
West Glass, 277 × 50 Btu. or	13,850 Btu.
Total sun effect heat	53,450 Btu.

*Provided with awnings, this possibly could have sun effect for east side glass substituted, amounting to 68 × 50 Btu. or 3,400 Btu., in place of the 13,850 Btu.

For the fourth item of body heat, our reader seems to have overlooked this entirely and we will assume a maximum occupancy in the room for customers and sales force of about 50 persons who will give off about 115 Btu. per hour of sensible heat in a surrounding temperature of 95 deg. Fahr. and this will add to the heat gain in the room

50 × 115 Btu. or ..... 5,750 Btu.

The fifth item of electric heat is added only when electric lighting is used in the day time or, if the electric load at night exceeds the sun effect by day, in which case the electric load is substituted in place of the sun effect. In the case in question we have no information as to whether the lights are used during the day when the sun is shining or not; or if the electric lights are used at night or what the current consumed amounts to. Of course, the two motors on the unit heaters to be added will create some heat but this is of so small a quantity that it will be neglected here. If it is desired to allow for electric lighting in the daytime, the 3.14 Btu. per hr. should be added for every watt hour used either in lighting or to operate electric motors.

As to the sixth item, so far as we have been informed, there will be no other sources of heat in the room and so there is nothing to add for this.

Now as to the dehumidifying load: with two air changes the cubic feet of outside air entering the room every hour is about 95,000, which is about 7,100 lb. of air and at 50 per cent relative humidity this air will

contain 354 grains × 0.50 or 177 grains of moisture per lb. at 105 deg. Fahr. If it is to be cooled down to 90 deg. Fahr. the actual cooling already has been calculated with the sensible heat, but the moisture which must be removed to prevent the humidity going over 50 per cent in the room when it is 90 deg. Fahr. (which means 217 grains × 0.50 or 109 grains per lb.) will be the difference between the two amounts or

177 gr. minus 109 gr. or 68 gr. per lb. of air.

Since there are 7,000 grains of moisture to a pound of moisture, the number of pounds of water to be removed from the infiltration air will amount to

7,100 lb. air × 68 gr. / 7,000 or 69 lb. (almost)

and, as it requires about 1,000 Btu. removed from each pound of water to condense it from vapor into water, the Btu. to be removed from the air on account of dehumidifying will approximate

69 lb. × 1,000 Btu. or 69,000 Btu.

Besides this, however, is the moisture added by the people in the room, which in Btu. form amounts to 275 Btu. per person per hour, so—for 50 persons—the dehumidifying load will amount to

275 Btu. × 50 or 13,750 Btu. additional.

The entire load may now be summarized as consisting of the following:

Sensible Heat

Walls, Glass, Ceilings and Floor	54,639	Btu.
Infiltration Cooling	28,512	Btu.
Sun Effect	53,450	Btu.
Body Heat	5,750	Btu.
Electric Heat	none	
Other Sources	none	
Total Sensible Heat	142,351	Btu.

Latent Heat

Dehumidifying Infiltration Air	69,000	Btu.
Dehumidifying Body Moisture	13,750	Btu.
Total Latent Heat	82,750	Btu.
Total Heat to Be Removed Per Hour	225,101	Btu.
Reduction for Sun Effect on Roof if Roof Is Cooled by Sprinkling	39,600	Btu.
Net Heat to Be Removed	185,501	Btu.

SPRINKLING ROOF

In regard to the reduction for sprinkling the roof, it should be explained that our correspondent expects to take the water after it passes through the unit heaters and to discharge this on the roof through some form of sprinkler, which, in our opinion, would kill the sun effect on the room and hence this sun effect on the roof may be neglected if this sprinkling is done, whereas, if it is not done, this sun effect must be considered in the heat gain for the room.

The next question is whether the unit heaters have sufficient capacity to work and our correspondent states that they are rated on a Btu. delivery of 279,000 Btu. steam rating with a temperature difference of about 157 degrees. This is about 7,780 Btu. for each degree

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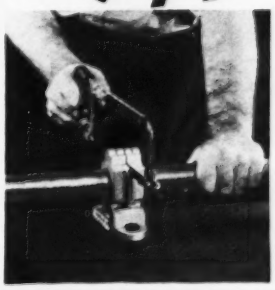

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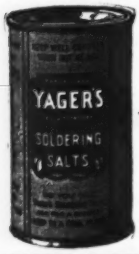

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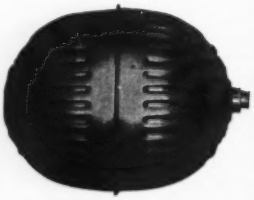
Judge a union by its ability to perform. Specify according to this judgment and your choice is bound to be DART. For DART Unions have a remarkable record of unfailing performance in innumerable installations that places them head and shoulders above others. Their two ground bronze seats and superior features of construction reveal the true secret of DART'S successful performance. Specify DART Unions.

E. M. DART MFG. CO.
PROVIDENCE, R. I.
Sales Agents: The Fairbanks Co. Canadian Factory: Dart Union Co., Ltd., Toronto.

Dart Unions

They Have a Right to Expect You to Use Reichert Floats!



Reichert Solderless Copper Floats assure better service for your customers and more profit for you. Made of heavy gauge sheet copper, they last, and last and last. The patented seam and spud constructions makes them the best on the market. They are thoroughly inspected and tested and guaranteed leak-proof. Write for free folders on the entire line of floats and rubber tank balls.

THE REICHERT FLOAT & MFG. CO.
2238 Smead Ave. • Toledo, Ohio

•WARNOCK•
Triple Wear Wrenches
The Warnock wrench is easy to adjust. The strap is arranged in such a way that it can be drawn absolutely tight in *one* movement. Notice, too, that this strap is triple folded at the point of greatest strain.
For chrome, brass and nickel plated pipe
WARNOCK MFG. CO., Worcester, Mass.

of temperature difference between the air and the medium in the heater. If the cooling water is, say, 60 deg. Fahr. on entering and 70 deg. Fahr. on leaving, the average temperature would be 65 deg. Fahr. while passing through the heater, and the temperature difference between the average water temperature passing through the unit and the room air would be

90 deg. Fahr. minus 65 deg. Fahr. or 25 degrees

and the Btu. transfer would be around

1,780 Btu. × 25 deg. Fahr. or 44,500 Btu.

Now the previous calculations have shown that there are some 185,500 Btu. to be removed, so that if each unit removes 44,500 Btu. the number of units required will be

185,500 Btu. / 44,500 Btu. or 4 units plus.

The amount of water required on the hottest day will be in pounds

185,000 Btu. / 10 Btu. or 18,500 lb., which is
18,500 lb. / 8.33 lb. or 2,300 gal.

This quantity of water may be reduced by allowing a greater temperature rise in the heater, which in turn will require more heaters, as will be seen by assuming a 20 degree temperature rise in the water. Then the average temperature of the water passing through the heaters will be as indicated in the following figures:

(60 deg. Fahr. plus 80 deg. Fahr. / 2 or 70 deg. Fahr.

and the Btu. removed by each unit will be

1,780 Btu. × (90 deg. Fahr. minus 70 deg. Fahr.) or 35,600 Btu., and the number of heaters required will be

185,000 Btu. / 35,600 Btu. or 5 plus,

while the quantity of water required will be just half as much as before, or

2,300 gal. / 2 or 1,150 gal. per hr.

One thing which should not be forgotten is that the water condensed out of the air, amounting to 69 lb., or over 8 gal. per hr., must be drained from the units and allowed to run to waste. Also he should be careful in regard to cold draughts from the units and should arrange them so as to get the best distribution possible and to leave no dead pockets in corners where the air will be out of circulation. He also should be sure that he will have sufficient water pressure after passing through the units to give a spraying effect on the roof.

Insulation—

(Continued from Page 48)

the same as that which would be installed in a building of average construction.

Harry Hart, also of Chicago, and past president of the A.S.H.V.E. replied by stating that heating contractors at one time accepted plans which specified thorough insulation and good building construction and made corresponding allowances in the heating equipment. The result in many instances was that they would be called back on the job during the first cold snap with complaints of the heating system not being adequate. Inspection very often would reveal that if there was any insulation at all, it had been installed in such a slip-shod manner as to nullify its effects. Mr. Hart pointed out that in self-protection it was necessary to adopt the rule that heating plans be designed for average or less than average con-

struction in order to carry the load imposed upon them during extreme weather conditions.

It was pointed out that although this practice disregards good installations of insulation in-so-far as the first cost of equipment is concerned, operating costs are dependent upon the effectiveness of the building construction and to that extent, they show a return on the investment for the home owner.

In this example, there is seen a new sales opportunity for heating contractor-dealers.

The automobile industry has shown us that the way to larger markets and greater volumes both in profits and activities is through economies which are passed on to the ultimate consumer. Good business demands that advantage be taken of every opportunity to bring about justified cost reductions so as to bring the item under consideration within the reach of largest numbers of purchasers.

For example, new impetus has been given to the sale of hot water heating through developments which have made it possible, through forced circulation and higher temperatures, to rate this type of hot water radiation on a basis comparable to steam radiation.

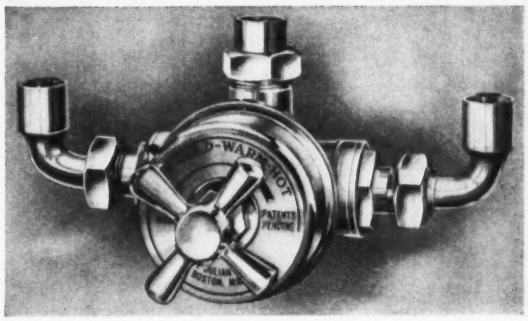
OPPORTUNITY AND RESPONSIBILITY

The opportunity and responsibility which is opened to the heating industry is that of including within its scope of activities the supervision if not the actual installation of insulating materials which make it possible to lessen both the first and operating costs of heating equipment.

When a home owner considers the remodeling of an existing heating plant or the installation of new heating equipment in a new building, his first thought is of the heating contractor-dealer. Therefore, whenever heating is considered, the heating contractor-dealer is in the key position to recommend auxiliaries or supplements to the bare heating installation. At such a time, the home owner is receptive to all of the splendid arguments in favor of insulation. The heating contractor-dealer, in his advisory capacity, is able to point out that while heating equipment could be installed which would take care of the heat losses from even a sieve, greatest economy and greatest comfort is obtained through first giving thought to the reduction of heat losses through average or poorly constructed walls and ceilings.

The heating contractor-dealer is the logical person to present this story, because of his responsibility for the heating comfort which the home owner enjoys. In the average mind, the job of heating a home is placed solely upon the heating equipment, regardless of leaky doors and windows and thin walls. This probably accounts for the fact that Mr. Hart found either a total lack of insulation or the slip-shod installation of this material on many of the buildings he encountered.

Thus far, nothing has been said in regard to the part that insulation plays in air conditioning. Just as in the case of heating, when the home owner thinks of air conditioning, he thinks of the contractor-dealer who handles the basic equipment. Further, the average home owner generally recognizes that no matter what kind of heating system he may have, the installation of air conditioning equipment would either modify or affect it, with the result that it is necessary to consult a heating contractor-dealer first. This, of course, places the heating contractor-



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NON-SCALD MIXING VALVE
"*Always* Positive in Action"

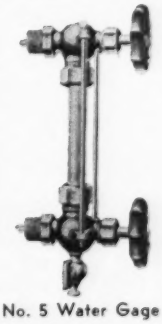
The d'Este Non-scald Mixing Valve is the only valve that instantly and completely shuts off delivery at the point of discharge, on failure of the cold water supply.

It eliminates for good the hazard of users being scalded, and holds the water at the desired temperature regardless of fluctuating pressures of hot and cold water and without scalding or cold shots.

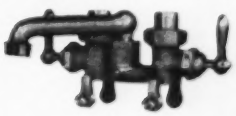
It is indispensable for Hotels, Hospitals, Institutions and Private Homes—especially where there are children. Barber Shops, Beauty Parlors, Gymnasiums, etc., find this valve particularly adaptable to their needs wherever water at predetermined temperatures is required.

The d'Este Mixing Valve is available in 4 types including Elbow Control for Surgical use. Write today for new Catalog.

JULIAN D'ESTE SALES CORPORATION
CHARLESTOWN, MASSACHUSETTS


No. 5 Water Gage

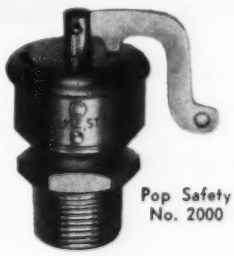
Fusible Plug No. 1611

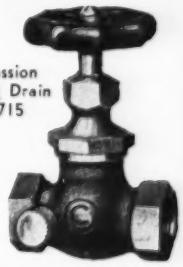

Double Tray Laundry Faucet

No. 1628 Outside Type Plug

No. 3 Compression Cock

FOR BETTER APPEARANCE AND LONGER SERVICE


Pop Safety No. 2000


Compression Stop and Drain No. 7715

CONSOLIDATED BRASS CO.
138 Summit Avenue Detroit, Michigan

Many a good installation (good as far as labor goes) has fallen back on the plumber's hands because the Price of unknown material promised a big Profit. But the priceless ingredient of Quality and the manufacturer's integrity was omitted from the Quotation.

PENNSYLVANIA RANGE BOILER CO.
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24th and Washington Ave., Philadelphia, Pa.

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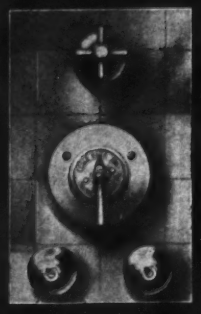
LEONARD



THERMOSTATIC WATER-MIXING VALVES

SERIES R

The LEONARD Series R valves are unsurpassable for smooth and instant action in the hospital shower or bathing tub. They insure perfect safety with no sudden changes in temperature. Durable construction and low cost make LEONARD VALVES a modern essential in hospital equipment. Literature sent on request.

LEONARD-ROOKE COMPANY
PROVIDENCE, RHODE ISLAND

dealer in the key position for recommendations as to how the home or establishment to be air conditioned should be modified for best results. It has been pointed out on various occasions that a startlingly small number of homes are capable of being air conditioned economically. Insulation, weather stripping and the like, to a large extent, are the governing factors.

For the benefit of the home owner, for the self-protection of heating and air conditioning contractor-dealers and for the expansion of our industry's markets, it is desirable and essential that the installation of insulation, as it affects our industry, should be supervised, if not actually made, by heating contractor-dealers.

Blows Hot—

(Continued from Page 58)

blows hot air. This continues until steam or very hot water closes the trap again. In this way the heater blows hot air, then cold air, in succession."

"But what makes the steam pressure at the heater go up and down?"

"When the heater is blowing hot air, it is using steam at a very rapid rate, causing a large drop in pressure in the supply piping. When the heater is blowing cold air, a large part of the heating surface is blocked off by the water, so the heater is using very little steam and the pressure drop in the supply piping is small. This explains why the steam pressure at the heater is high when the heater is blowing cold air and low when it is blowing hot air."

"I see it. How shall I fix this job?"

"Provide a long, large cooling leg before these traps."

"How long and large would you say?"

"About 10 ft. of 1¼ in. pipe, I should think."

"Are you sure this change will overcome our trouble?"

"Quite sure."

This letter received some two weeks later gives the results:

Dear Mr. Brown:

No doubt you will be interested to know how your suggested changes at the Goodland Paper Co. plant worked.

The day after you were here, I installed a 10 ft. cooling leg, made of 1¼ in. pipe, ahead of one of the ¾ in. thermostatic traps. This heater, which is at the end of the main and is equipped with a steam gauge, has been blowing extremely hot air ever since and the steam gauge shows a constant pressure of about 3½ lb.

Slums—

(Continued from Page 51)

People housed (100% occupancy)—1000

	Apartments	Rooms
In Apartment Buildings	252	840
In Houses	52	366
Total	304	1206

Apartments—176 three room, 68 four room, eight five room.

Houses—26 four room, 26 five room.

Bath rooms, utility rooms or any basement rooms not included in the above figures.

	Above First Floor	Including Basement
Building Cubage	1,981,900 cu. ft.	2,467,700 cu. ft.
Total direct radiation	42,950 sq. ft.	46,950 sq. ft.
One sq. ft. radiation serves	46.3 cu ft.*	52.6 cu. ft.
Average sq. ft. radiation per rm.	35.7 sq. ft.	38.9 sq. ft

*This figure is made up of a weighted average of 47.7 for apartment buildings and 42.2 for houses. Cubage figured on outside building measurements.

Heating steam per year 46,950 sq. ft. radiation at 450 lb. per sq. ft. per heating season ..... 21,127,500 lb.

Hot water—12 gallons per apartment per hour assumed as maximum requirement. 8 hours at maximum demand for 24 hours, 304 apartments = 10,652,160 gallons per year @ 1 lb. steam ..... 10,652,160 lb.

31,779,660 lb.

Line loss assumed—5 per cent transmission only ..... 1,588,983 lb.

Total steam per year ..... 33,368,643 lb.

In the above figures, it is assumed that the diversity of radiator use will compensate for radiation loss due to exposed risers and covered basement mains and branches.

Yearly steam per capita ..... 33,368 lb. per year
Yearly steam per apartment ..... 109,765 lb. per year
Yearly steam per room ..... 27,668 lb. per year

Engineering design and mechanical construction of the heating system for a housing project is no more difficult than for any institutional development comprising a number of isolated building units. The size and arrangement of the building, ground conditions, physical location, etc., must be given careful study and consideration.

Every effort is being made to make the installation substantial, reliable and economical of operation.

The plans and specifications are intended to provide for the best procurable materials and superior workmanship without limiting competition on high grade economical equipment.

Conductors—

(Continued from Page 75)

electric current on house service pipes and street mains with a corresponding increase in stray current hazards to the life and property of water consumers and water works employees.

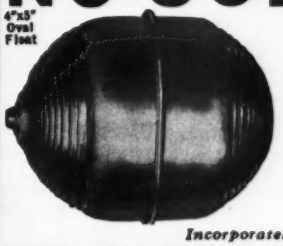
That the stray currents occurring with bare neutral wiring installations really constitute a serious problem is borne out by a recent investigation made by Underwriters Laboratories, Inc. The results of this investigation as reported in Underwriters Laboratories Fact Finding Report No. E 11064 dated January 10, 1935, show that in 69 of the 100 or more installations of bare neutral

The "GEM" at $59.50 LIST

1. 300 gal. per hour Shallow Well Pump
2. Repulsion Induction Motor
3. Silent Operation (mounted in rubber)
4. 30 gal galvanized Tank
5. Air Volume Control
6. Pressure Gauge
7. Automatic Pressure Switch
8. Automatic Overload Relay
9. Relief Valve
10. Completely assembled in one crate

UNIFLOW MFG. CO., ERIE, PA.

NO-SOL COPPER FLOATS

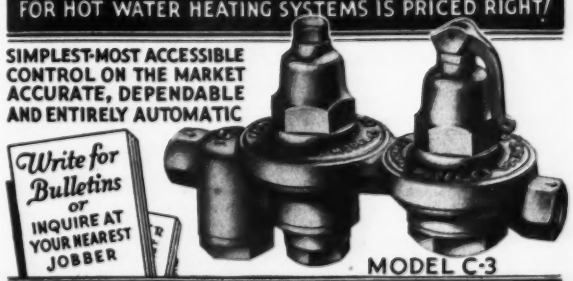


QUALITY MERCHANDISE *does most to stimulate* CONSUMER CONFIDENCE

Incorporated 1907
THE AYLING & REICHERT CO.
3047 NORTH ERIE STREET TOLEDO, OHIO

The KAINER Pressure Governor
FOR HOT WATER HEATING SYSTEMS IS PRICED RIGHT

SIMPLEST-MOST ACCESSIBLE CONTROL ON THE MARKET ACCURATE, DEPENDABLE AND ENTIRELY AUTOMATIC



MODEL C-3

KAINER & COMPANY
761 MATHER ST., CHICAGO, ILLINOIS

J&L PIPE

J&L PIPE

Buttwelded
Lapwelded
Seamless

JONES & LAUGHLIN STEEL CORPORATION
AMERICAN IRON AND STEEL WORKS
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THE 'CID' LINE

CID PUMPS
Fully Automatic

Goulds Shallow Well Water System—C2542-
250 gallons per hour capacity. Price $67.00

Longer Dealer Discounts
Goulds Shallow Well Pumps

Increased dealer discounts on CID Shallow Well Water Systems, still further increase your profit possibilities on this fast selling line. All signs point to a big 1936. Here's the line to get the business—priced to give you the biggest profit. Write today.

GOULDS PUMPS, INC.
210 Fall St., Seneca Falls, N. Y.

GOULDS

You WIN!

Because of the superior, more dependable workmanship which HINDLEY'S Plumbers' Specialties make possible, you

win the respect and undying gratitude of your customers. Do not fail to keep them handy at all times.

HINDLEY MFG. COMPANY
VALLEY FALLS, R. I.

HINDLEY'S
PLUMBERS' SPECIALTIES

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When you visit the Big City, stop at the modern, 24 story Hotel Piccadilly, in the very center of Times Square. Within 4 minutes WALK of "Radio City." 69 theatres. Madison Square Garden and important mid-town business offices and buying centers. Finely furnished rooms with all up-to-the-minute conveniences, including 60 watt bathroom bulbs—a great help when shaving! Rates as low as $2.50

(Please write for reservations to insure choice accommodations . . .)

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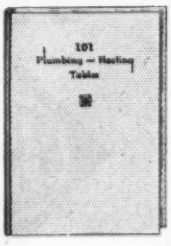
45th St., just West of B'way. W. Stiles Koones, Manager

101
Plumbing *and* Heating Tables

(Second, Revised Edition)



Completely revised and enlarged. Contains as complete a set of working tables as has ever been published. Answers quickly and accurately, practically every kind of plumbing and heating question which could possibly be answered by a table, rule or chart. Well indexed. Has 68 pages. Size 8x11, beautifully bound in cloth. Price postpaid $1.00

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wiring investigated, the stray or by-path current as the report calls it, ranged in magnitude from 20 per cent to 100 per cent of the load current.

With the conduit or armor carrying a substantial amount of the current, house water, gas, sewage or steam pipes, metal ceilings, metal lath or any other metal structures in the building with which the current carrying conduit or armor comes into metallic contact will shunt off a large or a small amount of stray current from the conduit or armor depending upon the conductivity of the respective paths. This current interchange over accidental or intermittent contacts may set up heating, sparking or arcing at the contacts. This constitutes a serious fire hazard and a possible explosion hazard if explosive or inflammable gases are present. Furthermore, current interchange over intermittent contacts may pit or burn holes in pipes causing gas, water, or sewage leaks in walls, ceilings or other inaccessible and dangerous locations. In addition, the flow of large stray currents over pipe lines which are not designed to be electrical conductors is always dangerous. It may set up electrical shock due to the existence of accidental high resistance joints, or it may burn out lead caulked joints, metal lath or metal ceilings. In addition, a number of waterworks operators believe that stray current flow on a water pipe may seriously impair the palatability of the water supply itself and that it may also affect the life of the pipes involved.

The American Water Works Association originally sanctioned the grounding of the secondary circuits of lighting transformers on the water pipes (a) for protective purposes only and (b) on the definite assurance that such protective grounds would not transmit stray currents to the pipes under normal conditions of operation. With increasing knowledge of the very general prevalence of stray current interchange over so-called protective ground connections and increasing experience with the troubles resulting from the presence of such stray currents, this association, in 1927 modified and restricted this sanction of protective grounds, and in May of this year it revoked the association's sanction of this practice entirely. At the same time, the association's committee on electrolysis and electrical interference recommended that if individual water works operators elect to permit the grounding of electric light and power circuits on water pipes they do so only under the most rigid restrictions and supervision, and the committee suggested that water works operators consider the enactment of local ordinances which would definitely prohibit the interconnection of an electric light or power circuit with any pipe which is connected with or designed to be connected with a water works piping system without the expressed consent of the parties legally responsible for the operation and maintenance of such water works piping system. In locations where bare neutral interior wiring is installed or contemplated on a trial or permanent basis the committee on electrolysis and electrical interference recommended that no water pipe ground connections be permitted and that an approved type of electrical insulating joint be inserted in the water service pipe between the water meter and the street curb, these precautions being designed to isolate the house piping and bare neutral wiring system from the water distribution network.

The committee did not intend to restrict in any way the use of water pipes for telephone protector grounds.

because the standard telephone protectors include an isolating spark gap which prevents stray current interchange during normal operating conditions, so that they are therefore strictly protective grounds. The committee also suggested that similar isolating spark gaps be made a part of electric light and power circuit grounds or that these be equipped with a suitable circuit breaker and relay control which will definitely disconnect the affected electric light or power service to a building upon the passage of a relatively small amount of current over the ground wire.

The foregoing outline gives a brief summary of the bare neutral wiring situation, and of the American Water Works Association's activities in connection with this form of wiring and with the broader general problems of stray currents on water pipes as the result of electric light and power system grounds, etc.

Continue FHA—

(Continued from Page 74)

financing of electrical appliances. "And we believe it would become even more effective if there were some assurance of its continuance after April 1," he says.

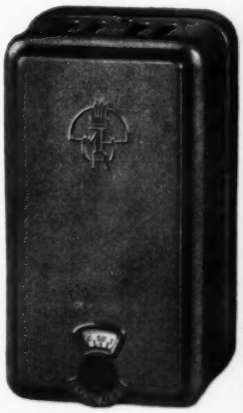
Leod D. Becker, publisher of *Fueloil*, says: "A campaign to arouse the building and heating industries to the need for supporting a well organized plan to extend FHA beyond April, 1936, is highly commendable. We will be glad to help it in any possible way."

Editor C. H. B. Hotchkiss of *Heating and Ventilating*, writes: "This magazine is entirely in sympathy with the Federal Housing program as carried out in the past. We regard it as probably the most successful of all the alphabetical agencies, and I believe that the improvement in building construction activity can be traced very largely to the work of this Administration. Naturally, therefore, we are in favor of its extension. We expect to do everything possible to insure this extension being accomplished."

F. P. Keeney, at the head of the company publishing *Heating, Piping and Air Conditioning* and *American Artisan*, places both of these publications behind the campaign and points out that FHA has been effective not only in the residential field, but since the extension of the insurance provisions to contracts involving larger amounts, has been of assistance in the commercial and industrial field. "Many residential commercial and industrial buildings," says Mr. Keeney, "are greatly in need of repairs or new equipment. The value of FHA has been that it has stimulated private capital in tapping a vast potential market. We feel, therefore, that FHA should be continued after April 1 and that publishers of business papers in the building and allied fields should inform their readers of the need for action."

In the field of home appliances and furnishings, *House Furnishing Review* has been very active in informing its readers of the possibilities under FHA using not only direct material from the field, but in one case carrying a very interesting statement of Henry Gordon Selfridge, famous London merchandiser who had his early training with Marshall Field in Chicago.

AIR CONDITIONING
CONTROLS
for
Domestic or
Commercial
Installations



MINNEAPOLIS-HONEYWELL Air Conditioning Controls govern all phases of this work, including heating, cooling, ventilating, humidifying or dehumidifying. There are controls for every application, each designed to accomplish its particular function with characteristic Minneapolis-Honeywell accuracy and efficiency. Minneapolis-Honeywell Regulator Company, 2801 Fourth Avenue South, Minneapolis, Minn. Branch and distributing offices in all principal cities.

Humidity Control. Very accurate, with exceptionally small differential. Range 20 to 80 per cent relative humidity . . .

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Control Systems

Never Before SUCH A
THOROUGHBRED PUMP

● A new, history-making addition to the complete line of McDONALD Power Pumps and Water Systems. Distributed through regular trade channels only.

A.Y. McDONALD MFG. CO.
DUBUQUE, IOWA
Omaha, Neb. . . Minneapolis, Minn. . . Des Moines, Ia. . . Kansas City, Mo.
Sioux City, Ia. . . Grand Island, Neb. . . Hutchinson, Kans.

Another type of article has been the story of the dealer handling house furnishings and appliances, or the department store interested in these products.

From the broader point of view of real estate generally, comes an interesting statement from Howard H. Bede, of the company which publishes *National Real Estate Journal*. Mr. Bede says: "The *National Real Estate Journal* is glad to support your campaign for the continuation of Title I of the National Housing Act beyond April 1, 1936. The modernization phase of the FHA activities has been of great benefit not only to the building industry, but also to the ownership of real estate, and it should certainly be permitted to continue as do other Titles of the Act."

Kenneth Reid, Managing Editor, *Pencil Points*, says: "Speaking editorially, we feel that the FHA has been successful in stimulating the bulk of whatever increase in building has taken place. The history of previous depressions indicates that resumption of residence construction generally leads the way out, and since it may very well be that the forthcoming year will mark a real upward surge, the FHA deserves great credit for what it has done. We think that it should be continued by all means."

Edwin A. Scott, president of the company which publishes the *Sheet Metal Worker*, is suggesting in the December issue of his paper that his readers avail themselves of FHA financing terms to install new equipment in their shops, thus taking a somewhat new point to stress with its readers. Mr. Scott also says:

"We are glad to join you in your efforts to further a movement which is so beneficial to business in general."

Findley M. Torrence, Editor, *Wood Construction*, writes enthusiastically: "You can certainly count on us to cooperate in the movement to continue FHA," and encloses with his letter a thick packet of tear sheets from issues of his paper which show from month to month the material that is being published on FHA. A typical article is entitled "Repairing Brown's Home." The sub-title for this article is: "A Practical Example of How the Housing Act Works."

When Congress convenes in January, it will be time to see that a letter like that reproduced in the November issue of DOMESTIC ENGINEERING is forwarded by every reader of this paper to his Representatives and Senators in Washington. In addition to this, that letter should be copied and handed to acquaintances in the building and allied fields. Since all of these business papers are calling FHA to the attention of their readers; since all are insisting that FHA must be continued, it is obvious that in practically every community in the United States there are enough men in the building and allied fields to make the strongest kind of a representation to the men in Washington who will vote on the continuance of Title I of the National Housing Act.

Let every reader take it on himself to unite, in his community, those business men interested in FHA as DOMESTIC ENGINEERING has taken on itself the task of showing that the business press of the country is aware of the value of FHA and the need for continuing this measure which, as its prime recommendation, calls private money into circulation.

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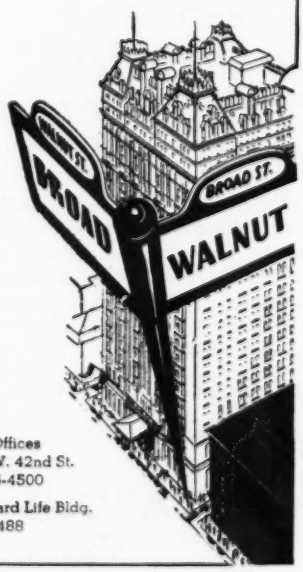

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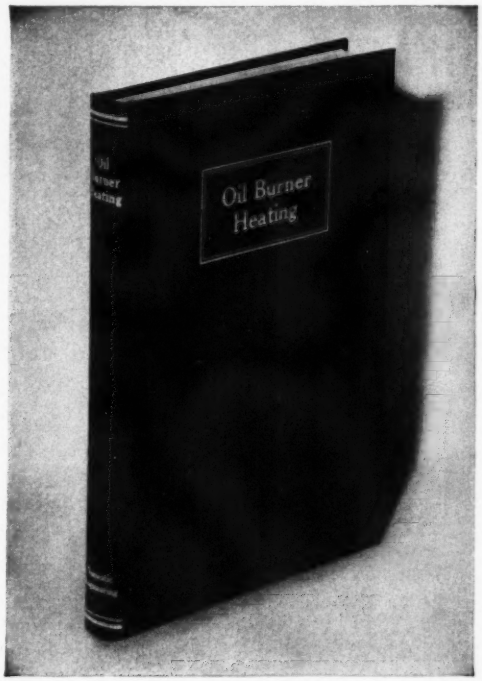

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What is involved in question of oil burner efficiency?
What equipment do you use to test oil burner?
What is a direct heating surface in a boiler?
What is indirect heating surface in a boiler?
At what rate of output of boiler do you find maximum efficiency?
How do you find heat losses?
How are combustion chambers built?
How to change condition in underheated room?
How do you test all year operation of a heating plant in moderate weather?
How do you know if air supply is correct?

★

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How to Clean a Boiler.
What Is the Hartford Loop?
How to Calculate Seasonal Heating Costs.
How to Figure Radiation Without Tables.

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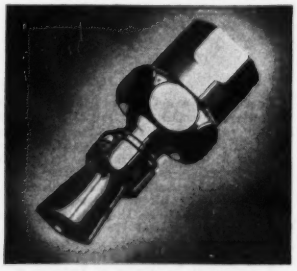

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